

PART A  
IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO



## IONOSPHERIC DATA

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## SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.  
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of  $f_oF_2$  (and  $f_oE$  near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of  $h'F$  (and  $h'E$  near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For  $f_oF_2$ , as equal to or less than  $f_oF_1$ .
2. For  $h'F_2$ , as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of  $fEs$  missing because of E or G are counted as equal to or less than the median  $f_oE$ , or equal to or less than the lower frequency limit of the recorder.

B for  $fEs$  is counted on the low side when there is a numerical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for  $fEs$  is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of  $fEs$  missing for any other reason, and values of  $h'Es$  missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.
- d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.



# PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949
December		150*	150*	150	42	11	15	33	53	86	108
November		150*	150*	147	35	10	16	38	52	87	112
October		150*	150*	135	31	10	17	43	52	90	114
September		150*	150*	119	30	8	18	46	54	91	115
August		150*	150*	105	27	8	18	49	57	96	111
July		150*	150*	95	22	8	20	51	60	101	108
June		150*	150*	89	18	9	21	52	63	103	108
May	146	150*	150*	77	16	10	22	52	68	102	108
April	150*	150*	150*	68	13	10	24	52	74	101	109
March	150*	150*	150*	60	14	11	27	52	78	103	111
February	150*	150*	150*	53	14	12	29	51	82	103	113
January	150*	150*	150*	48	12	14	30	53	85	105	112

\*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1957.

## Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	196	198	200	199
1958	198	200	200	196	189							

## WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the  
Commonwealth Observatory:

Brisbane, Australia  
Canberra, Australia

Commonwealth of Australia, Department of the Interior:  
Macquarie I.

Australian Department of Supply and Shipping, Bureau of Mineral  
Resources, Geology and Geophysics:  
Watheroo, Western Australia

Electronics Directorate of the Brazilian Navy:  
Natal, Brazil

British Department of Scientific and Industrial Research, Radio  
Research Board:  
Falkland Is.  
Ibadan, Nigeria (University College of Ibadan)  
Singapore, British Malaya  
Slough, England

Defence Research Board, Canada:  
Churchill, Canada  
Ottawa, Canada  
Resolute Bay, Canada  
Winnipeg, Canada

Danish National Committee of URSI:  
Godhavn, Greenland  
Narsarssuak, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:  
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:  
Sodankyla, Finland

French National Center for Telecommunications Studies:  
Dakar, French West Africa  
Tananarive, Madagascar



Institute for Ionospheric Research, Lindau Uber Northeim,  
Hannover, Germany:  
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:  
De Bilt, Holland

Icelandic Post and Telegraph Administration:  
Reykjavik, Iceland

National Institute of Geophysics, City University, Rome, Italy:  
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories, Tokyo,  
Japan:  
Akita, Japan  
Tokyo (Kokubunji), Japan  
Wakkanai, Japan  
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of  
Scientific and Industrial Research:  
Campbell I.  
Cape Hallett (Adare), Antarctica  
Scott Base, Antarctica

Manila Observatory:  
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propa-  
gation, Moscow, U.S.S.R.:  
Moscow

South African Council for Scientific and Industrial Research:  
Capetown, Union of South Africa  
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:  
Kiruna, Sweden  
Lycksele, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzer-  
land:  
Schwarzenburg, Switzerland

United States Army Signal Corps:  
Adak, Alaska  
Fletchers Ice I.  
Okinawa I.  
St. John's, Newfoundland  
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):

Anchorage, Alaska  
Byrd Station, Antarctica  
Ellsworth, Antarctica  
Fairbanks (College), Alaska (Geophysical Institute of the  
University of Alaska)  
Maui, Hawaii  
Panama Canal Zone  
Point Barrow, Alaska  
Pole Station, Antarctica  
Puerto Rico, W. I.  
San Francisco, California (Stanford University)  
Washington, D. C.

INDEX OF IONOSPHERIC DATA PUBLISHED IN 1958  
(CRPL-F 161 (A) THROUGH F 172(A))

The following index of tables and graphs of ionospheric data published in the CRPL-F(A) series in 1958 is divided into two parts. Part I is an index of data observed in 1957 and 1958. Part II is an index of data observed prior to 1957.

In general, both table and graphs for a given station for a given month appear in the same issue.

Indexes of ionospheric data published prior to 1958 are in IRPL-F17, CRPL-F28, -F40, -F52, -F64, -F76, -F88, -F100, -F112, -F124, -F136(A), -F148(A), and -F160(A).

## PART I

## Index of Tables and Graphs of Ionospheric Data Observed in 1957 and 1958

and Published in 1958 (CRPL-F161(A) through -F172(A)

Station	1957												1958											
	J	F	M	A	M	J	Jy	A	S	O	N	D	J	F	M	A	M	J	Jy	A	S	O	N	
Adak, Alaska								162	163	164	165		166	166	168	168	169	170	171		172			
Ahmedabad, India						170																		
Akita, Japan						161	163	162	163	164	165	166	168	168	170		172							
Alma-Ata, U.S.S.R.				161	168	164	170																	
Anchorage, Alaska								162	163	163	165		165	165	167	167	169	170	171	171	172	172		
Ashkabad, U.S.S.R.				167	168		170																	
Baguio, P.I.							161	162	162	163	164	166	167	167	168	168	169	170	171	171	172			
Baker Lake, Canada								162	163	163	165	165	166	167				171						
Bogota, Colombia								161	167															
Bombay, India						169																		
Brisbane, Australia		166						162	163	164	165	169	169	169			172							
Budapest, Hungary							161	162	167	166	169	169	170											
Bunia, Belgian Congo									162	165	166		169	171										
Byrd Station							172																	
Calcutta, India						170																		
Campbell I.							161	162	163	167	165	166	168	172										
Canberra, Australia								161	162	164	165	166	169	169			172							
Cape Waillett						161	162		167	167	169		170	171			172							
Capetown, Union of S.Africa							161	162 <sup>a</sup>	163	164	165	166	166	169			172	172						
Chiclayo, Peru							164	165	164	164	165	167	169	169	169	170	170							
Chimbote, Peru							164	165	166	167	169	169	170	170	170	170	170		170					
Chita, U.S.S.R.				167	168																			
Christchurch, New Zealand						166	161	162	163	167	170	167	168	168			171							
Churchill, Canada								161	164	166	165	166	166	167	169		172	172						
Concepcion, Chile												171												
Oe Bilt, Holland									163	163	166	165	166	169	168 <sup>b</sup>		171	172						
Oeception I.							170																	
Oelhi, India						169																		
Oourbes, Belgium							162				166													
Elisabethville, Belgian Congo						161	161	162	161	162	165	168	169	169	170									
Ellsworth						171	172	171	165	171	171	171												
Fairbanks, Alaska								162	163	164	165		165	165	168	168	169	171	171	172	172			
Falkland Is.				164	164	164	163	163	164	164	166	166	169	169	171	172	172							
Fletchers Ice I.							161	162	161	162	164	164	167	167	168	169	170	172						
Formosa, China								c	d	162	165		167	169	169	171	171							
Ft. Monmouth, New Jersey								161	162	162	164	165	165	167	168	169	169	171						
Godhavn, Greenland					163	161	161	161	162	164	172	172	171	171	171	171	171	171	172					
Grand Bahama I.								161	162	163	165	165	165	167	169	170	170	171	171					
Graz, Austria							161	161		161	165	165		165			168							
Hobart Tasmania				168	171	171	162	162	163	163	166	168	171	169	169									
Huancayo, Peru								163	164	164	165	165	167	167	168	169	169	170	170					
Ibadan, Nigeria						161	164		170	168	170	169	170				172							
Inverness, Scotland							161	163	163	164	165	166	167	168	170		171							
Irkutsk, U.S.S.R.					162	164							166	169			172	172						
Johannesburg, Union of S.Africa								162	163	164	166	166	166	169										
Juliusruh/Rugen, Germany					167		163	163	163															
Kiruna, Sweden										164	165	166	166	165	169	172	168							
Kodaikanal, India						171																		
La Paz, Bolivia										165														
Leningrad, U.S.S.R.					162	168	164																	

## PART I (CONCLUDED)

Station	1957												1958											
	J	F	M	A	M	J	Jy	A	S	O	N	D	J	F	M	A	M	J	Jy	A	S	O	N	
Leopoldville, Belgian Congo						161	161	162	161	162	165	166	167	169	170									
Lindau/Harz, Germany							163	167	167	167	172	167	168	171										
Lulea, Sweden							162	162	164															
Lycksele, Sweden											162	166	167	165	171		172							
Macquarie I.	171				172		171	166	168	170														
Madras, India						171																		
Mauui, Hawaii								161	162	164	164		166	166	167	167	168	169	170	171	172			
Meanook, Canada							166	164	166	165	165													
Moscow, U.S.S.R.		169		161	163	163	170	171	169	169	170	171	172	169	171									
Murmansk, U.S.S.R.		167	167	167	167		170																	
Narsarsuak, Greenland				167				168	169	164	164	164	166	167	168	168	169	170	171	172	172			
Natal, Brazil															172	171		172						
Nurmijarvi, Finland							161		164	166	165		166	168	171		172	172						
Okinawa I.								162	163	164	165		167	167	168	168	169	171	171	172				
Oslo, Norway								161	164	165	164		167	168										
Ottawa, Canada								163	164	165	166		166	167			171	172						
Panama Canal Zone							161	161	162	164	165		166	167	167	168	169	170	170	171	172			
Paramaribo, Surinam							162	166	169															
Point Barrow, Alaska							161	162	163	164	165		165	167	167	167	169	170	171	172				
Pole Station							172				171	164												
Providenie Bay, U.S.S.R.				161	168								167	167	168	169	169	170	170	171	172			
Puerto Rico, W.I.								162	162	164	165		167	167	168	169	169	170	170	171	172			
Rarotonga I.		169		e	e	161 <sup>ef</sup>	161 <sup>g</sup>	162 <sup>g</sup>	163 <sup>g</sup>	168 <sup>g</sup>	170	168 <sup>f</sup>	167	168										
Resolute Bay, Canada							161	161	163	163	165	165	166	167	168	170	172	172						
Reykjavik, Iceland								162	162	163	164	165	167	167	168	170	170	170	171	172				
Rome, Italy												169	166		171		172	172						
Rostov-on-Don, U.S.S.R.				167	168		170																	
St. John's, Newfoundland								161	162	164	165		166	167	167	168	169	170			172			
Salehard, U.S.S.R.							170																	
San Francisco, California								161		169	170	170	169	170	170	170	171	172						
Sao Paulo, Brazil							161	162	163	166	170	166	171	171										
Schwarzenburg, Switzerland								166	166	165			167	168	169		172	172						
Scott Base							i	162 <sup>i</sup>	163 <sup>i</sup>	167 <sup>h</sup>	169 <sup>h</sup>	167 <sup>h</sup>	166	171			172	172						
Simferopol, U.S.S.R.																								
Singapore, British Malaya	161				164	164	164	164	163	164						172	172							
Slough, England							161	162	167	164	166	169	168 <sup>j</sup>	171	169	170	172							
Sodankyla, Finland								162	163	168	168	168	167	168	171	171	172							
Svalbard, Norway								166	166															
Sverdlovsk, U.S.S.R.				161	168	164	170																	
Talara, Peru							163	163	163	165	165	165	166	168	168	170	170	170	171	172				
Thule, Greenland								161	162	162	164	165	165	167	168	168	170							
Tiruchy, India						169																		
Tokyo, Japan						161	163	162	163	164	165	166	168	169	170		172							
Tomsk, U.S.S.R.				161		164	170																	
Tortosa, Spain								164				166												
Townsville, Australia								162	164	164	166	168	169											
Trivandrum, India						171																		
Tromso, Norway								161	163	163	165		166	168										
Tsumeb, South W. Africa							171																	
Tucuman, Argentina							170																	
Upsala, Sweden									161	164	165		168	165	169	170	168							
Victoria, Canada								163	163	164	169	167												
Wakkanai, Japan						161	163	162	163	164	165	166	168	168	170		172							
Washington, D.C.									161	162	163	163	166	166	166	167	169	169	170	171	172			
Watheroo, W. Australia							161		163	164	166	166	168	169			172							
White Sands, New Mexico								162	163	164	165		167	167	168	168	170	170	171	172				
Winnipeg, Canada								162	163	163	165	165	166	166			172							
Yakutsk, U.S.S.R.				167	168	164																		
Yamagawa, Japan						161	163	162	163	164	165	166	168	168	170		172							
Yuzhno-Sakhalinsk, U.S.S.R.				167	168																			

<sup>a</sup>See erratum 2 in CRPL-F163(A), p. viii.<sup>b</sup>See erratum 1 in CRPL-F169(A), p. viii.<sup>c</sup>See erratum 2 in CRPL-F164(A), p. viii.<sup>d</sup>See erratum 1 in CRPL-F164(A), p. viii.<sup>e</sup>See erratum in CRPL-F162(A), p. 8.<sup>f</sup>See erratum 1 in CRPL-F170(A), p. viii.<sup>g</sup>See erratum 4 in CRPL-F163(A), p. viii.<sup>h</sup>See erratum 2 in CRPL-F170(A), p. viii.<sup>i</sup>See erratum 4 in CRPL-F163(A), p. viii.<sup>j</sup>See erratum 2 in CRPL-F169(A), p. viii.

## PART II

## Index of Tables and Graphs of Ionospheric Data Observed Prior to 1957 and

Published in 1958 (CRPL-F161(A) through -F172(A))

Station	1956												1953											
	J	F	M	A	M	J	Jy	A	S	O	N	D	J	F	M	A	M	J	Jy	A	S	O	N	D
Ahmedabad, India			163	163																				
Akita, Japan										166														
Bombay, India			165	163																				
Brisbane, Australia										162	162	162												
Budapest, Hungary							163																	
Calcutta, India			164	163																				
Campbell I.	172												163											
Casablanca, Morocco						162	162	165	163															
Christchurch, New Zealand										167														
Dakar, French W.Africa	172	171																						
Delhi, India			163	163																				
Djibouti, Fr.Somaliland	171	171																						
Hobart, Tasmania										162	162	162												
Kodaikanal, India			164	164																				
Macquarie I.												171												
Madras, India			165	163																				
Poitiers, France						162	162	167	163															
Quetta, Pakistan							161																	
Sao Paulo, Brazil										161														
Tananarive, Madagascar	172	171																						
Tiruchy, India			165	163																				
Tokyo, Japan										166														
Townsville, Australia										162	162	162 <sup>a</sup>												
Wakkanai, Japan										166														
Yamagawa, Japan										166														

<sup>a</sup>See errata 1 and 3 in CRPL-F163(A), p. viii.





# TABLES OF IONOSPHERIC DATA

October 1958 - January 1959

Table 1

Anchorage, Alaska (61.2°N, 149.9°W)

October 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.1						2.50
01		4.0						2.40
02		3.9						2.40
03		3.9						2.35
04		(3.85)						(2.35)
05		3.8						2.40
06		4.5						2.50
07		(6.05)			127	(1.95)		(2.85)
08		7.5			119	2.40		3.00
09		9.0			114	2.78		3.00
10		9.7			111	3.00		2.90
11		10.6			111	3.10		2.80
12		11.15			110	3.15		2.80
13		11.5			113	3.05		2.80
14		11.7			115	2.90		2.80
15		11.7			117	2.60		2.85
16		12.0			123	2.28		2.85
17		11.2			---	---		2.90
18		10.0						2.90
19		8.4						2.85
20		7.1						2.88
21		5.4						2.80
22		4.8						2.70
23		4.4						2.50

Time: 150.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W)

September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.95)					3.0	(2.55)
01		(5.25)					3.4	(2.45)
02		(5.45)					2.7	(2.40)
03		(5.65)					3.6	(2.40)
04		(5.7)					3.8	(2.50)
05		(5.6)			---	---		(2.55)
06		6.3			---	---		2.70
07		7.0			119	2.65		2.80
08		7.0			4.2	109	2.90	2.70
09		7.65			---	107	3.10	2.60
10		7.4			4.9	109	3.30	2.60
11		8.1			4.6	105	3.40	2.60
12		8.3			5.0	104	3.50	2.60
13		8.15			5.0	109	3.40	2.60
14		8.65			4.9	110	3.20	2.65
15		9.0			(4.6)	111	3.00	2.70
16		9.0			---	111	2.80	2.75
17		8.5			---	111	2.55	2.80
18		8.5			---	---	---	2.85
19		8.1			---	---	---	2.80
20		7.0			---	---	---	2.80
21		6.25			---	---	---	2.75
22		(4.9)						(2.70)
23		(5.1)						2.6 (2.55)

Time: 150.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Narsarsuaq, Greenland (61.2°N, 45.4°W)

September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.25)					2.9	(2.50)
01		(5.4)			---	---	2.8	(2.45)
02		(5.4)			---	---	3.2	(2.42)
03		(5.3)			---	---	3.0	(2.50)
04		5.1			---	---	3.1	2.55
05		5.3			---	---	3.3	2.65
06		6.4			<128	2.50		2.90
07		6.95			---	113	2.80	2.90
08		7.55			4.2	112	3.05	2.80
09		7.95			4.8	106	3.25	2.80
10		8.1			5.0	105	3.45	2.70
11		8.6			5.3	107	3.55	2.60
12		9.0			5.1	105	3.50	2.58
13		9.3			5.0	105	3.50	2.55
14		8.9			5.0	105	3.40	2.62
15		9.2			(4.8)	107	3.20	2.60
16		8.9			4.3	109	2.95	2.60
17		7.8			---	115	2.70	2.68
18		7.4			---	131	(2.45)	2.65
19		7.2			---	129	(2.25)	2.65
20		6.6			---	---	---	3.2
21		(5.85)						3.2 (2.40)
22		(6.05)						3.9 (2.45)
23		(5.2)						4.0 (2.50)

Time: 45.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Point Barrow, Alaska (71.3°N, 156.8°W)

September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)	315				4.8	(2.60)
01		(5.9)	320				4.0	(2.55)
02		(5.6)	300				3.2	(2.52)
03		>5.25	335				3.0	(2.50)
04	---	(5.6)	325	---	---	---	3.2	(2.50)
05	---	(5.6)	320	---	---	---	2.8	(2.55)
06	---	(5.6)	320	---	<125	(2.28)		(2.60)
07	<500	(6.3)	(310)	---	121	(2.60)		(2.62)
08	(630)	(6.15)	260	(3.8)	116	2.92		(2.65)
09	---	6.85	260	---	113	2.90		2.70
10	(525)	7.1	240	---	(111)	3.00		2.62
11	(460)	7.35	240	4.5	109	(3.05)		2.65
12	(495)	7.4	240	4.4	(113)	3.10		2.62
13	<560	7.5	240	---	(113)	3.10		2.60
14	(520)	7.6	240	4.5	(113)	3.00		2.60
15	(410)	8.6	240	4.4	(113)	2.85		2.60
16	---	7.8	240	---	(117)	2.65		2.62
17	---	7.5	250	---	<123	2.50		2.70
18	---	7.3	260	---	<132	2.35		2.75
19	---	6.9	270	---	(133)	(2.20)		2.70
20	---	(6.3)	310		131	---	2.6	2.70
21		(4.7)	335				2.8	(2.65)
22		(5.0)	320				3.2	(2.55)
23		(5.85)	325				4.0	(2.50)

Time: 150.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W)

September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.45						2.45
01		4.6						2.42
02		4.8						2.35
03		(4.5)						(2.35)
04		(4.5)						(2.35)
05		(4.95)						(2.45)
06		(5.6)			---	---		2.55
07		6.4			3.6	117	2.55	2.75
08		7.1			4.3	113	2.98	2.68
09		7.4			4.5	111	3.20	2.58
10		7.75			4.6	111	3.40	2.55
11		8.25			4.7	111	3.45	2.55
12		8.55			4.8	111	3.58	2.58
13		8.85			(5.0)	111	3.52	2.55
14		9.35			4.9	111	3.40	2.60
15		9.5			4.9	113	3.15	2.65
16		9.65			---	115	2.80	2.75
17		9.3			---	(120)	2.45	2.80
18		8.8			---	<133	(2.00)	2.80
19		8.1						2.80
20		6.8						2.75
21		6.1						2.70
22		5.85						2.70
23		4.8						2.55

Time: 150.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Adak, Alaska (51.9°N, 176.6°W)

September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.35	<340					2.40
01		5.0	<355					2.35
02		4.85	(355)					2.30
03		4.7	350					2.28
04		4.5	(365)					2.30
05	---	4.85	325	---	(121)	---	1.4	2.40
06	(610)	6.7	270	3.5	<121	(2.30)	2.4	2.65
07	(640)	8.15	250	3.8	115	2.72	3.2	2.75
08	(725)	9.05	240	4.5	109	3.15	3.6	2.80
09	500	9.7	230	4.8	109	3.45	3.6	2.70
10	(550)	10.2	230	4.9	109	3.55	3.7	2.65
11	(640)	10.45	225	5.0	109	3.70		2.65
12	(510)	10.8	225	5.1	109	3.75		2.65
13	(510)	10.75	230	---	109	3.70		2.60
14	---	10.6	230	---	109	3.55		2.65
15	---	10.25	235	---	109	3.25		2.70
16	---	10.0	245	---	111	3.00		2.75
17		9.7	250	---	119	2.60	2.7	2.80
18		9.2	250	---	<129	2.20		2.80
19		8.6	250				1.8	2.80
20		7.7	<260				1.9	2.80
21		6.9	260				1.6	2.75
22		6.0	(275)				2.0	2.60
23		5.5	<310					2.50

Time: 180.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

St. John's, Newfoundland (47.6°N, 52.7°W) September 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.05	300					2.52
01		6.8	280					2.50
02		(6.4)	275					2.55
03		6.0	280					2.55
04		5.4	270					2.58
05		5.8	270		116	1.80		2.80
06	---	7.5	250	---	116	2.50		3.00
07	---	8.65	240	---	111	3.02		3.00
08	---	9.0	230	---	109	3.40		2.90
09	---	9.5	220	---	109	3.70		2.85
10	(470)	9.6	220	5.5	109	3.80		2.70
11	(530)	9.65	220	5.4	105	3.90		2.62
12	(570)	9.95	220	---	105	3.90		2.60
13	(490)	9.95	230	5.6	109	3.80		2.60
14	---	10.2	230	---	109	3.60		2.60
15	---	10.4	235	---	109	3.30		2.55
16	---	10.5	245	---	111	3.00		2.65
17	---	10.35	260		119	2.40		2.70
18	---	10.2	260					2.70
19		9.6	250					2.65
20		8.7	260					2.60
21		8.0	285					2.50
22		7.8	300					2.55
23		7.2	295					2.55

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Okinawa I. (26.3°N, 127.8°E) September 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>15.0	260					(2.85)
01		>14.35	250					(2.80)
02		>13.0	250					(2.85)
03		11.45	230					2.85
04		>9.1	225					2.90
05		8.0	245					2.85
06		8.4	260					2.90
07		10.9	240		---			3.20
08	---	11.4	230	---	---			3.10
09	---	11.9	220	---	109	(3.55)		4.2
10	---	12.6	215	---	109	(4.00)		4.5
11	(385)	14.1	220	---	(109)	4.25		4.6
12	385	(15.05)	215	(7.2)	(111)	(4.25)	>4.5	(2.60)
13	390	(15.65)	225	(7.0)	111	(4.30)	4.5	(2.60)
14	390	(16.0)	<230	(7.0)	111	(4.20)	4.4	2.58
15	380	(16.55)	230	(6.8)	111	4.00	4.3	2.60
16	360	(16.45)	240	(6.6)	111	3.75	4.4	(2.65)
17	(340)	15.35	250	---	---		5.4	2.70
18	---	>14.0	260	---	---		4.8	(2.75)
19		(13.5)	275				4.0	(2.68)
20		>14.2	(300)				3.8	(2.60)
21		(18.0)	(290)					(2.70)
22		(17.15)	275					(2.80)
23		(14.5)	260					(2.90)

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: Height scale expanded morning of 11th.

Table 11

Puerto Rico, W.I. (18.5°N, 67.2°W) September 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	275					2.80
01		9.25	265					2.88
02		8.5	250					2.95
03		7.1	230					2.80
04		6.7	255					2.70
05		6.3	265					2.75
06		6.6	270					2.80
07		9.3	235		<118	2.50	>2.5	3.15
08		10.8	230		109	3.15	3.5	3.05
09	---	11.9	220		109	3.60	4.2	2.90
10	---	12.7	220		109	4.00	4.0	2.75
11	---	13.2	215		109	4.15	4.3	2.68
12	(380)	13.3	215	---	109	4.25	>4.4	2.62
13	(385)	13.4	215	---	111	4.20		2.60
14	385	13.2	220	---	109	4.15	4.3	2.60
15	380	12.9	230		111	4.00	>4.1	2.60
16	---	12.5	230		109	3.65	4.0	2.60
17	---	11.8	240		111	3.00	3.8	2.65
18	---	11.3	255		116	2.35	3.0	2.65
19		10.55	265				>1.9	2.65
20		10.0	280					2.60
21		9.8	285					2.60
22		9.7	290					2.65
23		9.8	280					2.75

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Washington, O. C. (38.7°N, 77.1°W) September 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.25	290					2.60
01		7.1	285					2.60
02		6.8	285					2.55
03		6.5	280					2.55
04		6.0	285					2.55
05		5.6	280					2.55
06		6.65	260		115	1.85		2.90
07	---	8.8	240		109	2.75		3.00
08	---	10.1	230	---	107	3.20		2.98
09	(280)	10.4	220	---	105	3.55		2.80
10	(640)	10.7	220	5.4	105	3.85		2.65
11	(490)	11.05	210	5.8	105	3.95		2.60
12	(480)	11.0	210	5.8	105	4.00		2.60
13	(510)	11.0	225	5.7	105	4.00		2.55
14	(445)	10.9	225	6.1	105	3.90		2.55
15	(420)	10.7	230	6.0	105	3.60		2.55
16	---	10.6	235	---	105	3.25		2.60
17	---	10.35	245	---	110	2.68		2.65
18	---	10.2	260		(119)	2.00	2.0	2.70
19		9.6	245					2.70
20		8.6	250					2.60
21		8.2	270					2.60
22		7.8	270					2.65
23		7.6	280					2.62

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Maui, Hawaii (20.8°N, 156.5°W) September 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.7	240				2.3	2.95
01		11.0	245					2.90
02		9.5	240					2.90
03		7.9	235				1.8	2.95
04		6.5	245					2.80
05		5.8	265				2.4	2.70
06		5.9	280		<125	----	3.2	2.70
07	---	9.05	250	---	111	2.60	4.6	3.08
08	---	10.7	230	---	107	3.20	4.0	2.95
09	---	11.8	225	---	105	3.70	4.3	2.65
10	---	13.0	220	---	107	3.95	4.5	2.60
11	(405)	14.0	220	7.4	107	4.10	4.7	2.60
12	385	14.4	(225)	(7.3)	(107)	4.20	4.8	2.60
13	400	14.35	230	(7.5)	(109)	4.28	4.9	2.55
14	385	14.6	230	7.1	107	4.20	4.8	2.55
15	385	14.4	230	7.0	<111	4.00	4.6	2.60
16	350	14.2	(240)	---	107	3.60	4.9	2.65
17	<340	13.6	245		(109)	3.10	4.9	2.65
18	---	13.5	260		115	2.12	5.0	2.70
19		13.9	(270)		111	----	5.5	2.70
20		14.7	285				4.8	2.70
21		14.3	270				4.8	2.70
22		14.4	260				3.8	2.80
23		(13.6)	250				3.3	(2.95)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Baqiao, P. I. (16.4°N, 120.6°E) September 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.5	260					(2.85)
01		(13.0)	245					(3.00)
02		(11.0)	230					(2.95)
03		9.2	240					2.85
04		(8.2)	250					(2.88)
05		7.7	250					2.90
06		7.85	290					2.80
07		10.3	260		125	(3.00)	3.9	2.85
08		12.0	250		<121	(3.45)	5.4	2.45
09		13.2	(245)		121	(3.88)	5.4	2.30
10		13.9	(240)		(121)	(4.10)	4.6	2.20
11		13.55	(245)		(121)	(4.20)	4.7	2.15
12		13.6	<240		<125	(4.30)		2.08
13		13.75	<240		<121	(4.20)		2.10
14		14.0	245		(119)	(4.10)		2.20
15	---	14.55	250		(121)	3.90		2.15
16	---	(14.35)	260		119	3.42	4.6	(2.20)
17		(12.95)	280		(125)	(2.55)	3.5	(2.20)
18		>12.0	325		---	----	2.6	(2.10)
19		(11.4)	460					(2.05)
20		----	(400)					----
21		(11.5)	(350)					----
22		(12.0)	(300)					(2.55)
23		(12.8)	280					(2.75)

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 13

Panama Canal Zone (9.4°N, 79.9°W)

September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.3	250					2.90
01		9.05	230					3.02
02		8.0	220					2.95
03		6.75	230					2.75
04		6.0	250					2.70
05		5.05	255					2.70
06		5.85	300					2.65
07		9.0	245		117	----		2.92
08		10.95	235		107	3.30		2.85
09		12.35	230		106	3.75	3.8	2.65
10		13.7	225		107	4.00	4.4	2.60
11	(390)	14.1	220	---	107	4.25	4.4	2.55
12	395	14.5	220	---	107	4.30	4.7	2.55
13	395	14.95	225	7.0	107	4.30	5.0	2.50
14	400	14.95	(230)	7.0	107	4.20	4.6	2.50
15	390	14.7	<240	---	106	3.90	5.0	2.48
16	390	14.0	(240)	---	107	3.60	4.0	2.48
17	(355)	13.5	250	---	109	3.00	4.0	2.50
18		13.0	<270	---	---	---	3.4	2.55
19		13.0	200				2.6	2.55
20		>13.0	200					2.60
21		12.0	265					2.65
22		11.6	260					2.70
23		11.7	260					2.80

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Point Barrow, Alaska (71.3°N, 156.0°W)

August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00								
01		(5.15)	300		117	(2.10)	2.1	(2.60)
02		(5.2)	310		---	---	3.0	(2.52)
03		(5.45)	310		109	---	3.2	(2.65)
04		(5.6)	305		119	---	3.8	(2.50)
05	<430	(5.2)	300		(120)	---	3.0	(2.60)
06	490	(5.3)	300		3.6	(119)	(2.70)	(2.45)
07	435	(5.5)	(280)		3.9	108	(2.85)	(2.40)
08	510	5.6	260		4.0	104	3.25	2.35
09	500	5.6	250		4.4	105	3.30	2.30
10	550	5.85	250		4.6	101	3.40	2.30
11	555	5.7	240		4.6	(101)	3.50	2.30
12	530	5.8	240		4.8	101	3.40	2.30
13	510	6.0	250		4.9	101	(3.52)	2.38
14	550	6.0	230		4.9	(102)	(3.50)	2.32
15	495	6.15	230		5.0	101	3.45	2.45
16	400	6.3	230		4.9	<109	3.35	2.45
17	475	6.4	230		4.8	102	3.20	2.45
18	(470)	6.3	230		4.5	(106)	3.05	2.50
19	(460)	6.5	240		---	(109)	2.85	2.55
20	---	6.35	255		---	<111	(2.65)	2.55
21	---	5.8	275		---	(122)	(2.50)	2.65
22	---	5.6	300		---	(132)	2.48	2.60
23		(5.35)	310		129	(2.30)	2.9	(2.70)
		(5.55)	330		---	---	3.3	(2.60)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Fairbanks, Alaska (64.9°N, 147.8°W)

August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.0)					3.6	2.55
01		(5.4)					4.5	(2.60)
02		(5.2)					4.4	(2.55)
03		(5.4)					4.2	(2.60)
04		5.45					4.4	2.45
05		5.6		(3.8)	---	---	3.3	2.50
06		6.1		(4.2)	111	2.70	3.2	2.50
07		6.15		4.4	105	3.00		2.38
08		6.2		4.6	103	3.20		2.35
09		6.4		4.8	101	(3.32)		2.45
10		6.6		4.9	101	3.50		2.45
11		6.4		5.0	101	>3.55		2.40
12		6.2		5.2	101	3.60		2.40
13		6.3		5.1	101	3.50		2.45
14		6.4		5.1	101	3.50		2.42
15		6.4		5.0	103	3.40		2.45
16		6.45		4.9	103	3.20		2.50
17		6.5		4.6	107	3.00		2.65
18		6.45		---	108	>2.60		2.65
19		6.4		---	118	>2.30		2.00
20		6.3		---	---	---		2.70
21		5.9					2.0	2.70
22		5.2						2.65
23		5.0					3.5	2.55

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Reykjavik, Iceland (64.1°N, 21.8°W)

August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			4.7	(425)			3.5	2.38
01			4.9	440			3.9	2.32
02			4.7	(440)			3.7	2.35
03	---		4.6	(410)			3.7	2.48
04	---		4.95	(370)				2.58
05	---		5.0	(295)		115	(2.40)	2.60
06	---		5.4	260		115	2.65	2.70
07	---		5.9	260		117	3.00	2.65
08	(500)		6.1	240		4.7	(114)	3.25
09	450		6.4	235		5.0	110	3.38
10	485		6.8	<240		5.2	111	3.50
11	460		6.8	220		5.5	115	3.60
12	490		6.95	230		5.5	113	3.70
13	500		7.1	220		5.5	115	3.70
14	455		7.1	230		5.5	112	3.70
15	455		7.1	230		5.5	112	3.55
16	430		7.05	240		5.2	115	>3.40
17	415		6.9	245		5.1	117	3.30
18	(340)		6.85	260		4.8	115	3.00
19	---		6.7	285		---	119	2.90
20	---		6.5	300		---	127	2.70
21	---		6.0	340		---	---	2.5
22			5.5	<380		---	---	3.3
23			5.0	415		---	---	4.4

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 17

Narsarsuaq, Greenland (61.2°N, 45.4°W)

August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.8)	390				4.1	(2.45)
01		(4.7)	(380)				4.0	(2.40)
02		(4.7)	<405				(3.2)	(2.40)
03		(4.4)	(435)		---	---	3.7	(2.45)
04	---	(4.65)	(350)	---	---	---	3.6	(2.75)
05	---	4.9	(320)	---	109	(2.42)	3.8	2.75
06	---	5.25	(285)	---	109	2.88	3.4	2.80
07	(410)	5.8	265	4.6	107	(3.30)	3.3	2.80
08	(460)	6.0	240	4.8	105	3.40		2.70
09	(460)	6.3	240	5.0	105	(3.50)	3.8	2.68
10	470	6.5	225	5.4	105	3.65		2.60
11	470	6.7	225	5.3	105	(3.70)		2.55
12	475	7.0	220	5.4	103	3.75		2.50
13	490	7.1	225	5.4	104	(3.80)		2.50
14	450	6.95	220	5.2	105	3.70		2.60
15	460	6.95	225	5.0	103	3.52		2.50
16	470	6.8	230	4.9	104	3.30		2.62
17	(450)	6.6	250	4.6	107	3.10		2.60
18	(390)	6.7	260	---	111	2.80		2.65
19	---	6.0	300	---	121	2.68		2.60
20		(6.0)	325		125	(2.45)	2.8	(2.60)
21		(5.3)	350				3.3	(2.50)
22		(5.2)	350				4.6	(2.50)
23		(5.2)	345				4.3	(2.50)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

White Sands, New Mexico (32.3°N, 106.5°W)

August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			6.25	<330				2.45
01			6.35	310				2.52
02			6.1	300				2.55
03			6.0	300				2.55
04			5.9	310				2.50
05			5.7	300				2.55
06	---		6.8	260		---	119	2.35
07	---		8.35	240		---	111	3.00
08	(400)		9.2	235		---	109	(3.42)
09	420		9.7	225		5.8	110	(3.80)
10	410		10.1	210		6.0	109	4.02
11	405		10.3	<220		6.2	105	4.20
12	400		10.5	230		6.1	109	4.25
13	405		10.3	230		6.1	110	4.20
14	410		10.3	230		6.0	108	4.10
15	395		10.2	230		5.8	110	4.00
16	400		9.65	<235		(5.4)	110	3.65
17	---		9.0	250		---	111	3.20
18	---		8.7	260		---	113	2.55
19	---		8.5	270		---	---	3.2
20			>7.7	265		---	---	2.65
21			7.25	275		---	---	2.60
22			6.9	300		---	---	2.55
23			6.5	315		---	---	3.0

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

Godhavn, Greenland (69.3°N, 53.5°W)

July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.9)			---	---		(2.60)
01		(4.75)			---	---		2.65
02		(4.8)			---	---		(2.55)
03		(4.8)			---	---		(2.60)
04		(4.85)			---	(123)	2.30	(2.72)
05		(4.6)			4.0	<121	2.40	(2.62)
06		(5.0)			4.1	(116)	2.62	(2.40)
07		4.6			4.2	115	3.00	6
08		(4.95)			4.4	111	(3.20)	6
09		(5.5)			(4.5)	109	(3.30)	6
10		5.9			4.7	109	(3.42)	(2.50)
11		(6.1)			(4.9)	109	(3.35)	(2.40)
12		(6.2)			(4.9)	109	(3.40)	(2.30)
13		(5.7)			4.8	109	(3.40)	(2.35)
14		(5.9)			4.8	109	3.40	2.35
15		(5.05)			4.8	109	(3.30)	(2.40)
16		(5.4)			4.8	109	>3.20	3.5 (2.18)
17		(5.4)			4.7	110	3.18	2.42
18		(5.4)			4.6	113	---	(2.40)
19		5.4			(4.2)	116	---	2.52
20		5.6			(4.0)	121	2.50	2.60
21		(5.4)			---	(129)	(2.35)	2.55
22		(5.45)			---	135	---	(2.65)
23		(5.1)			---	---	---	2.62

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 21

Fletchers Ice I. (79.9°N, 116.1°W)\*

June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	470	5.7	<250	4.3	109	(2.70)		2.40
01	460	5.6	250	4.0	109	(2.70)		2.50
02	440	5.8	250	4.0	109	(2.70)		2.50
03	450	5.85	250	4.0	109	2.70		2.50
04	410	5.85	240	4.0	109	(2.70)		2.55
05	430	5.6	240	4.1	109	(2.70)		2.50
06	430	5.5	240	4.2	109	2.80		2.50
07	470	5.5	(240)	4.4	109	2.90		2.50
08	505	5.6	240	4.5	107	3.00		2.40
09	510	5.4	230	4.6	105	(3.10)		2.40
10	520	5.5	<235	4.6	104	(3.20)		2.40
11	540	5.5	(225)	4.7	101	(3.30)		2.30
12	535	5.6	220	4.7	101	(3.40)		2.32
13	530	5.5	215	4.8	101	(3.50)		2.40
14	550	5.7	215	4.7	101	(3.50)		2.30
15	530	5.55	210	4.7	101	(3.50)		2.30
16	530	5.55	220	4.7	101	(3.40)		2.30
17	535	5.4	220	4.7	101	(3.42)		2.30
18	540	5.7	<225	4.6	103	(3.30)		2.35
19	520	5.65	(235)	4.6	105	(3.25)		2.30
20	550	5.4	(240)	4.4	105	(3.18)		2.30
21	515	5.7	<245	4.4	105	3.02		2.30
22	520	5.6	250	4.4	109	3.00		2.35
23	480	5.5	250	4.3	109	2.80		2.30

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

\*Preliminary estimated average position.

Table 23

Nurmijarvi, Finland (60.5°N, 24.6°E)

June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0					<1.0	2.50
01		6.9					<1.8	2.50
02		6.8					<1.8	2.50
03		7.0					<1.9	2.55
04		6.8					<2.4	2.60
05		6.9			4.0	2.40	(2.7)	2.60
06		6.8			4.5	2.80		2.55
07		6.6			4.9	3.20		2.50
08		6.8			5.0	3.40	3.4	2.45
09		6.9			5.2	---	---	2.50
10		7.1			5.3	---	3.9	2.50
11		7.2			5.4	---	---	2.50
12		7.0			5.6	---	---	2.50
13		7.0			5.4	---	---	2.50
14		6.8			5.6	---	---	2.50
15		6.8			5.4	---	---	2.55
16		6.8			5.3	---	---	2.55
17		6.8			5.2	---	3.3	2.55
18		7.0			---	---	3.0	2.65
19		7.0			---	2.60	3.5	2.70
20		7.0			---	---	<3.2	2.75
21		7.0			---	---	<2.3	2.70
22		7.0			---	---	(2.0)	2.70
23		7.0			---	---	<1.8	2.55

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 20

White Sands, New Mexico (32.3°N, 106.5°W)

July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	300				2.5	2.60
01		6.0	300					2.60
02		5.9	310				2.5	2.50
03		5.8	310				2.3	2.55
04		5.5	310				2.1	2.55
05		5.3	300		115	---	2.4	2.60
06	---	6.1	250	---	111	(2.45)	3.0	2.80
07	420	7.0	235	4.6	105	3.00	3.8	2.70
08	400	8.1	220	5.0	102	(3.50)	4.2	2.55
09	400	8.5	220	5.3	103	(3.75)	4.6	2.50
10	440	9.0	210	5.5	103	(3.95)	4.0	2.45
11	410	9.4	(210)	5.6	103	(4.10)	4.6	2.45
12	425	9.5	215	5.7	103	(4.20)	4.7	2.45
13	430	9.5	220	5.8	103	(4.20)	4.9	2.45
14	400	9.6	220	5.6	104	(4.02)	4.7	2.50
15	390	9.35	<225	5.4	101	3.80	4.1	2.55
16	410	8.95	(225)	5.2	101	(3.60)	4.4	2.55
17	360	8.75	230	4.9	103	3.25	4.0	2.70
18	(320)	8.5	245	---	109	2.70	3.5	2.75
19		8.3	265		(119)	(1.90)	3.1	2.75
20		7.7	250				3.0	2.70
21		6.95	260				3.0	2.65
22		6.6	300				3.6	2.60
23		6.4	300				3.0	2.60

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

Resolute Bay, Canada (74.7°N, 94.9°W)

June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	(450)	5.6	260	3.6	110	2.3		2.55
01	400	5.4	250	3.6	105	2.4		2.5
02	450	5.6	250	3.0	105	2.5		2.5
03	560	5.2	240	3.8	106	2.6		2.5
04	500	5.2	230	4.0	100	2.8		2.6
05	450	5.4	230	4.2	100	2.9		2.5
06	480	5.4	230	4.4	100	3.0		2.5
07	540	5.2	220	4.5	100	3.1		2.3
08	540	5.4	220	4.6	100	3.3		2.35
09	530	5.5	210	4.8	100	3.4		2.4
10	540	5.8	210	4.8	100	3.5		2.3
11	550	5.4	210	4.8	100	3.5		6
12	560	5.6	210	4.9	100	3.5		2.3
13	560	5.8	210	4.8	100	3.5		6
14	600	5.4	210	4.8	100	3.5		6
15	550	5.6	210	4.8	100	3.4		2.3
16	510	5.9	210	4.7	100	3.3		2.3
17	500	6.0	210	4.6	100	3.2		2.4
18	400	6.0	220	4.5	100	3.1		2.4
19	470	5.8	220	4.4	100	2.9		2.4
20	460	6.0	230	4.3	100	2.8		2.4
21	410	6.0	240	4.0	100	2.6		2.5
22	460	6.0	260	4.0	105	2.5		2.5
23	(470)	5.8	260	3.8	105	2.4		2.5

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

Churchill, Canada (58.8°N, 94.2°W)

June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.6	300		---	1.4	5.0	---
01		5.2	300		---	1.3	4.6	---
02		5.0	310		---	1.5	4.5	---
03		5.0	320	---	110	1.9	4.5	---
04	430	5.0	300	3.5	110	2.2	4.5	---
05	540	4.9	250	3.9	110	2.6	4.5	---
06	550	5.0	250	4.2	105	3.1	4.5	6
07	570	5.3	240	4.6	100	3.6	4.4	G
08	620	5.7	240	5.0	100	3.8	4.5	G
09	540	6.0	230	5.0	100	3.7	5.0	(2.4)
10	530	6.2	220	5.2	100	3.9	4.8	2.5
11	590	6.3	220	5.3	100	3.9	4.6	(2.5)
12	520	6.5	220	5.3	100	3.9	4.5	2.4
13	500	6.9	220	5.4	100	3.9	4.5	2.4
14	500	7.2	210	5.3	100	3.8	4.5	2.4
15	480	7.0	220	5.2	100	3.8	4.4	2.4
16	460	6.9	230	5.1	105	3.6	4.5	2.5
17	480	6.7	230	5.0	105	3.4	4.3	2.5
18	460	6.4	250	4.7	110	3.2	4.4	2.5
19	440	6.1	280	4.2	110	3.0	4.4	(2.5)
20	---	6.0	300	---	120	2.7	4.3	---
21	---	5.8	320	---	125	2.5	4.3	---
22	---	5.7	340	---	120	2.0	6.2	---
23	---	5.6	300	---	---	1.3	5.9	---

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.



Table 25

Oe Bilt, Holland (52.1°N, 5.2°E)

June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	7.0						2.55
01	315	6.9						2.55
02	315	6.5						2.60
03	310	6.4	---	---	---	E		2.55
04	275	6.8	280	---	---	2.3		2.65
05	300	7.0	245	4.0	120	2.8	3.0	2.65
06	365	7.2	240	4.8	115	3.2	3.4	2.70
07	370	7.3	230	5.2	110	3.6	4.0	2.70
08	430	7.7	225	5.4	110	4.0	4.3	2.65
09	450	7.2	220	5.0	110	---	---	2.60
10	400	7.5	220	6.0	---	---	---	2.65
11	430	7.2	---	6.0	---	---	---	2.60
12	455	>7.4	220	6.0	---	---	---	2.60
13	410	7.4	220	6.0	---	---	---	2.65
14	430	7.4	215	6.0	---	---	---	2.65
15	405	7.3	230	5.7	115	---	---	2.70
16	400	7.3	230	5.7	115	3.0	3.9	2.70
17	350	7.6	240	5.2	115	3.3	4.4	2.75
18	300	7.5	250	---	115	3.1	5.0	2.80
19	270	7.8	---	---	130	2.6	4.2	2.90
20	270	7.7					3.0	2.85
21	295	7.6						2.70
22	300	7.6						2.60
23	300	7.4						2.60

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 26

Schwarzenburg, Switzerland (46.0°N, 7.3°E)

June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.9						2.0
01	300	7.2						2.7
02	300	7.0						2.7
03	300	6.7						2.0
04	310	6.5					2.5	2.8
05	200	6.7	---	---	120	1.0	3.1	3.0
06	200	7.4	250	4.0	100	2.5	3.7	3.0
07	320	7.9	230	5.0	100	3.0	5.0	3.0
08	340	8.1	230	5.4	100	3.4	5.3	3.0
09	360	8.5	220	5.8	100	3.6	6.0	2.9
10	400	8.2	210	5.9	100	3.8	6.2	2.9
11	400	0.5	210	6.2	100	3.9	5.3	2.9
12	410	8.3	200	6.0	100	4.0	5.9	2.0
13	410	8.5	220	6.0	100	4.0	5.2	2.9
14	410	8.2	210	6.0	100	4.0	4.5	2.9
15	400	8.2	220	6.0	100	3.9	5.2	2.9
16	390	8.0	220	5.6	100	3.7	5.0	2.9
17	360	7.9	230	5.6	100	3.5	5.6	3.0
18	330	0.0	230	5.2	100	3.0	5.3	3.0
19	290	0.2	---	---	100	2.5	4.8	3.1
20	270	8.0			---	---	4.2	3.1
21	200	8.0					4.0	3.0
22	300	7.9					3.6	2.9
23	300	7.0					2.0	2.85

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 27

Ottawa, Canada (45.4°N, 75.9°W)

June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.4	320				2.6	---
01		5.6	300				2.3	---
02		5.0	300				3.0	---
03		4.9	300				2.3	---
04		4.6	320			1.7		---
05		5.1	270	---	120	2.2		---
06	(560)	5.5	250	4.2	110	2.9		---
07	500	5.7	240	4.9	105	3.3		G
08	540	6.0	230	5.0	105	3.6		G
09	580	6.2	220	5.2	105	3.9		G
10	550	6.6	220	5.4	100	4.0		G
11	620	6.0	220	5.6	100	4.0		G
12	550	6.8	220	5.5	100	4.0		G
13	530	6.9	220	5.6	105	4.0		(2.4)
14	520	7.0	220	5.6	105	4.0		(2.5)
15	490	7.1	220	5.4	105	4.0		(2.6)
16	460	7.2	230	5.3	110	3.7		(2.5)
17	410	7.2	240	5.0	110	3.4		2.55
18	400	7.5	260	4.5	110	3.0		2.6
19	---	8.0	200	---	120	2.3		2.6
20		0.0	200		---	1.7	2.8	(2.6)
21		0.0	200				2.1	---
22		7.3	200					---
23		6.6	290					---

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 28

Rome, Italy (41.0°N, 12.5°E)

June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		0.5	310				3.4	2.40
01		0.0	330				3.4	2.35
02		8.2	<330				3.6	2.40
03		7.7	310				2.6	2.40
04		7.0	320				2.5	2.45
05	---	7.4	290	---	140	2.0	3.4	2.55
06	---	8.6	260	---	110	2.7	4.0	2.65
07	---	0.6	250	---	110	3.2	5.0	2.70
08	(450)	0.8	250	5.6	110	3.5	5.6	2.50
09	(440)	0.6	(240)	5.6	110	3.8	6.4	2.55
10	420	9.7	<250	6.2	110	3.9	6.7	2.45
11	440	9.0	240	6.0	110	4.0	6.4	2.40
12	410	10.0	220	6.1	110	4.0	6.0	2.40
13	420	9.4	240	6.1	110	4.1	5.0	2.45
14	410	9.7	<240	6.0	110	4.0	4.0	2.45
15	400	9.3	240	6.0	110	3.9		2.50
16	390	9.0	250	5.7	110	3.7	5.6	2.50
17	---	8.8	250	---	110	3.4	5.0	2.60
18	---	8.0	(270)	---	110	2.9	5.3	2.65
19		9.0	300		120	2.1	5.8	2.70
20		8.0	200		---	---	5.0	2.60
21		(8.0)	290		---	---	5.0	(2.50)
22		(8.0)	310				4.7	(2.40)
23		0.0	310				5.2	2.35

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 29

San Francisco, California (37.4°N, 122.2°W)

June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		6.3	(320)				3.5	2.45
01		6.0	(320)				2.5	2.42
02		5.9	(320)				2.7	2.45
03		5.7	(320)				2.5	2.45
04		5.5	335				2.5	2.40
05	(530)	5.5	290	---	125	1.90	2.0	2.50
06	500	6.4	250	4.0	109	2.55	2.9	2.45
07	455	6.0	230	4.0	101	3.10	3.6	2.50
08	500	7.1	220	5.0	101	3.45	4.1	2.40
09	520	7.0	210	5.2	101	3.65	4.5	2.35
10	510	7.05	210	5.3	101	3.85	4.5	2.40
11	480	7.5	200	5.3	101	3.90	4.6	2.40
12	490	7.0	210	5.5	101	4.00	4.6	2.45
13	460	7.0	220	5.5	101	4.00	>4.0	2.50
14	450	7.9	220	5.5	101	3.90	4.2	2.40
15	435	7.7	220	5.4	101	3.80		2.50
16	420	7.5	230	5.2	101	3.65		2.50
17	410	7.5	240	5.0	103	3.30	3.6	2.60
18	---	7.2	250		109	2.75	3.2	2.65
19		7.0	275		(120)	2.00	2.9	2.70
20		6.0	270				3.5	2.70
21		6.7	<300				3.7	2.55
22		6.5	300				3.1	2.50
23		6.2	<320				3.5	2.50

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Natal, Brazil (5.3°S, 35.1°W)

June 1950\*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---	---					---
01	---	---	---					---
02	---	---	---					---
03	---	---	---					---
04	---	---	(260)					---
05	---	---	---					---
06	(4.6)	(260)						(2.90)
07	(8.45)	(310)						---
08	(11.2)	(240)			---	---		(2.90)
09	(12.55)	(220)			---	---		(2.80)
10	(13.2)	(210)			---	---	(5.0)	(2.60)
11	(13.1)	<210			---	---		(2.25)
12	(13.0)	(210)			---	---		(2.25)
13	(12.5)	(210)			103	---		(2.22)
14	(12.0)	<230			---	---		(2.22)
15	>12.0	(225)			---	---		(2.30)
16	(11.9)	(230)			---	---	(4.4)	(2.30)
17	(12.1)	(250)			---	---		(2.35)
18	>9.75	(275)			---	---		---
19	>7.8	(340)			---	---		---
20	(6.7)	(440)			---	---		---
21	(6.0)	(410)			---	---		---
22	---	---						---
23	---	---						---

Time: 30.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 32.4 seconds.

\*Data observed from June 13 through 30 only.

Table 31

Scott Base (77.8°S, 166.8°E)									
June 1958									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(4.9)	300				<1.6	(2.50)	
01		4.6	300				<1.9	2.45	
02		4.4	320				<1.3	(2.40)	
03		(4.7)	300				<1.7	(2.50)	
04		(4.2)	280				(2.1)	(2.70)	
05		4.5	260				<1.8	(2.55)	
06		(4.1)	270				<1.8	2.50	
07		4.4	250				<1.9	2.75	
08		4.4	260				<2.5	2.65	
09		4.8	250				<3.0	2.60	
10		(5.6)	<260				<2.3	(2.60)	
11		5.5	280				<2.7	2.60	
12		5.2	270				<2.5	2.70	
13		6.3	260				<3.0	2.60	
14		6.8	270				<2.5	2.55	
15		7.1	270				<2.3	2.70	
16		8.1	260				<2.0	2.50	
17		>8.0	260				<2.0	2.70	
18		7.6	260				<1.7	2.50	
19		7.6	260				<1.8	2.60	
20		6.4	280				(2.0)	2.50	
21		(6.0)	290				<2.0	(2.45)	
22		5.4	290				<1.6	2.50	
23		(5.4)	290				<1.6	(2.50)	

Time: 165.0°E.

Table 33

Sodankylä, Finland (67.4°N, 26.6°E)									
May 1958									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		---	405		---	---	4.1	---	
01		---	390		---	---	4.0	---	
02		(6.9)	400		---	---	3.5	(2.45)	
03		6.8	345		---	---	3.6	2.45	
04		6.6	300		---	E	3.8	2.50	
05		6.8	270		120	2.55	3.9	2.55	
06		6.9	250	---	120	2.75	3.9	2.50	
07		6.8	245	---	115	3.10		2.45	
08		7.1	240	---	110	3.30		2.40	
09		7.2	230	5.0	110	3.40		2.40	
10		7.4	230	5.1	105	3.50	4.9	2.40	
11		7.4	225	5.1	110	3.60	4.4	2.40	
12		7.4	220	5.2	105	3.70		2.40	
13		7.4	220	5.3	110	3.65		2.45	
14		7.6	230	---	110	3.50		2.45	
15		7.7	225	---	110	3.45		2.45	
16		7.4	240	---	110	3.30		2.50	
17		7.3	250	---	110	3.15		2.55	
18		7.5	250	---	110	2.90	3.4	2.65	
19		7.6	260	---	115	2.65	3.9	2.65	
20		7.4	290	---	120	2.40	3.8	2.70	
21		7.4	310	---	---	E	3.5	2.60	
22		7.1	355	---	---	E	3.6	2.50	
23		(7.1)	390	---	---	---	3.5	(2.50)	

Time: 30.0°E.

Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 35

Nurmijärvi, Finland (60.5°N, 24.6°E)									
May 1958									
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		7.0					<1.7	2.40	
01		7.2					<1.7	2.40	
02		6.4					<1.7	2.35	
03		6.8					<1.8	2.45	
04		6.6					<2.0	2.40	
05		6.8					<2.4	2.50	
06		6.8				2.1		2.50	
07		6.7		4.3		2.6		2.40	
08		6.7		4.8		3.0		2.40	
09		7.1		5.1		3.2		2.40	
10		7.6		5.3		3.4		2.40	
11		7.7		5.4		3.5		2.40	
12		7.9		5.6		---		2.30	
13		7.8		5.6		---		2.40	
14		8.0		5.7		---		2.40	
15		7.8		5.6		---		2.40	
16		7.9		5.6		---		2.45	
17		8.1		5.2		---		2.50	
18		7.8		---		---		2.50	
19		7.9		---		---		2.55	
20		7.8		---		---		2.65	
21		7.6		---		---	<2.6	2.65	
22		8.0		---		---	<2.2	2.55	
23		7.7		---		---	<2.0	2.40	
24		7.2		---		---	<1.7	2.40	

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 32

Resolute Bay, Canada (74.7°N, 94.9°W)									
May 1958									
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	---	6.2	270	---	105	2.0		2.5	
01	---	6.4	270	---	105	2.0		2.6	
02	---	6.2	270	---	100	2.1		2.5	
03	---	6.4	270	---	100	2.3		2.55	
04	480	6.2	250	4.0	100	2.5		2.5	
05	460	6.0	240	4.1	100	2.7		2.5	
06	430	6.0	230	4.4	100	2.8		2.5	
07	480	6.0	230	4.5	100	3.0	3.8	2.4	
08	520	5.7	220	4.8	100	3.1	3.7	2.4	
09	520	6.0	220	4.8	100	3.2		2.4	
10	500	6.1	220	4.8	100	3.4		2.4	
11	500	6.2	210	4.9	100	3.5		2.3	
12	530	6.0	220	4.9	100	3.5		2.3	
13	510	6.2	210	4.8	100	3.4		2.4	
14	500	6.1	210	4.8	100	3.3		2.3	
15	500	6.2	220	4.8	100	3.3		2.3	
16	500	6.0	220	4.8	100	3.2		2.35	
17	420	6.8	220	4.7	100	3.0		2.4	
18	470	6.6	220	4.5	100	2.9		2.45	
19	420	6.2	230	4.4	100	2.8		2.5	
20	(460)	6.3	250	4.0	100	2.5		2.5	
21	---	6.4	260	---	100	2.4		2.6	
22	---	6.5	270	---	100	2.2		2.6	
23	---	6.2	280	3.5	105	2.1		2.5	

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 34

Lycksele, Sweden (64.6°N, 18.8°E)									
May 1958									
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		6.3	370		---	E	3.6	2.3	
01		6.2	340		---	E	2.7	2.3	
02	(335)	6.3	340	(2.50)	---	E	2.6	2.3	
03	375	6.2	305	3.30	105	1.70	2.9	2.3	
04	370	6.1	270	3.75	105	2.15	3.4	2.4	
05	375	6.1	250	4.05	105	2.50	3.3	2.4	
06	415	6.4	240	4.55	105	2.90	3.7	2.4	
07	445	6.9	235	5.00	105	3.15	4.0	2.4	
08	450	7.2	235	5.20	105	3.30	4.1	2.4	
09	470	7.3	225	5.50	105	3.50	4.2	2.4	
10	490	7.2	225	5.50	105	3.55	4.2	2.4	
11	480	7.3	225	5.50	105	3.60	4.4	2.4	
12	460	7.5	220	5.70	105	3.70	4.3	2.4	
13	470	7.4	220	5.55	105	3.60	4.1	2.4	
14	455	7.3	220	5.50	105	3.50	4.2	2.4	
15	410	7.3	230	5.35	105	3.40	4.0	2.4	
16	420	7.3	235	5.20	105	3.25	4.0	2.5	
17	365	7.4	240	4.80	105	3.00	3.8	2.5	
18	340	7.3	250	4.60	105	2.65	3.5	2.5	
19	(355)	7.2	260	4.00	105	2.20	3.4	2.6	
20	---	7.0	285	---	110	1.80	3.0	2.5	
21	---	6.8	305	---	115	1.40	3.2	2.5	
22	---	6.3	330	---	---	E	2.7	2.3	
23	---	6.5	350		130	0.75	3.6	2.3	

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 36

Churchill, Canada (59.8°N, 94.2°W)									
May 1958									
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		6.0	300				5.7		
01		5.5	300		---	---	5.2		
02		5.2	320		---	---	4.5		
03		5.1	330		---	---	1.6	4.5	
04		5.2	320	---	120	2.0	4.6		
05	(540)	5.2	280	3.5	110	2.4	4.0	---	
06	480	5.8	260	4.2	110	3.0	5.0	6	
07	500	6.0	260	4.7	110	3.3	4.9	(2.4)	
08	520	6.4	240	5.0	105	3.5	4.8	(2.4)	
09	540	6.8	230	5.1	105	3.6	4.6	2.35	
10	520	6.8	220	5.2	105	3.8	4.6	2.3	
11	530	7.0	220	5.3	100	3.8	4.8	2.4	
12	530	7.1	220	5.4	105	3.8	4.6	2.4	
13	500	7.4	220	5.4	100	3.8	4.0	2.4	
14	480	7.6	220	5.4	100	3.7	4.5	2.4	
15	460	7.4	220	5.2	105	3.6	4.6	2.4	</



Table 37

Slough, England (51.5°N, 0.6°W)								May 1950
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>7.1	320				<1.3	2.35
01		7.1	320				>1.0	2.30
02		6.9	320				1.0	2.30
03		6.5	320				<1.10	2.30
04		6.4	310		115	1.60		2.40
05		6.7	270		110	2.20	2.4	2.50
06	---	7.2	250	---	100	2.80	3.0	2.60
07	410	7.4	240	5.1	100	3.15	3.4	2.55
08	110	7.9	235	5.6	100	3.50	4.0	2.55
09	470	8.0	225	5.7	100	3.80	4.2	2.50
10	460	8.4	225	5.7	100	3.90	4.4	2.45
11	450	8.8	215	5.9	100	4.00	4.3	2.45
12	450	8.5	225	6.0	100	4.00	4.3	2.50
13	455	8.8	225	6.0	100	4.00	4.2	2.45
14	435	8.7	235	5.8	100	3.95	4.4	2.50
15	435	8.6	235	5.7	100	3.80	4.0	2.55
16	400	8.5	235	5.6	100	3.60	3.8	2.55
17	370	8.6	245		100	3.20	3.2	2.60
18		8.4	250		105	2.70	3.1	2.65
19		8.5	265		125	2.20	2.6	2.65
20		8.4	270			1.70	<1.8	2.60
21		8.0	270				<1.6	2.50
22		(7.6)	290				<1.6	2.40
23		(7.2)	310				<1.6	2.35

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 39

Schwarzenburg, Switzerland (46.0°N, 7.3°E)								May 1950
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	0.0						2.7
01	320	7.7						2.7
02	310	7.2						2.7
03	310	7.0						2.7
04	300	6.8						2.7
05	300	6.9	---	---	---	---		2.9
06	260	7.4	250	4.1	100	2.40	3.1	3.0
07	300	8.0	230	5.0	100	2.90	4.2	3.1
08	350	0.1	220	5.6	100	3.30	4.6	3.0
09	400	0.5	210	5.0	100	3.60	4.9	2.9
10	420	0.5	210	6.1	100	3.75	4.6	2.8
11	400	9.0	210	6.2	100	3.80	4.2	2.8
12	400	9.1	210	6.4	100	4.00	4.6	2.0
13	400	9.4	210	6.0	100	4.00		2.8
14	400	9.6	220	6.2	100	3.90		2.8
15	380	9.5	220	6.0	100	3.80	4.4	2.8
16	370	9.3	220	6.0	100	3.65		2.9
17	340	8.8	230	5.0	100	3.30	4.7	2.9
18	240	8.0	240	4.0	100	2.90	3.6	3.0
19	270	8.6	---	---	100	2.30	3.8	3.0
20	270	8.5			---	---	2.2	3.0
21	280	8.3						2.9
22	290	8.0						2.8
23	300	0.1						2.7

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 41

Rome, Italy (41.0°N, 12.5°E)								May 1950
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		8.8	330					2.30
01		0.8	330					2.30
02		(8.3)	330				2.2	2.30
03		7.6	300					2.40
04		7.5	310					2.35
05		7.8	300		150	1.9	2.2	2.50
06	---	8.5	260	---	110	2.6		2.60
07	---	9.0	250	---	110	3.1	4.7	2.70
08	---	9.2	<240	---	110	3.5	5.1	2.50
09	(440)	9.8	240	5.8	110	3.8	5.0	2.40
10	410	10.1	220	6.2	110	3.9	5.2	2.40
11	420	10.6	220	6.4	110	4.0		2.40
12	410	10.8	230	6.3	110	4.0		2.40
13	410	11.2	230	6.0	110	4.1		2.35
14	410	11.2	240	6.2	110	4.0		2.40
15	(380)	11.0	250	5.9	110	3.9	5.4	2.45
16	(450)	10.6	250	5.4	110	3.7	5.4	2.45
17	---	10.4	250	---	110	3.3	5.8	2.50
18		(10.3)	260		110	2.7	5.1	(2.50)
19		(10.2)	280		120	2.0	4.0	(2.60)
20		9.6	270				3.5	2.55
21		9.0	290				2.7	2.40
22		9.0	310				2.2	2.35
23		(9.1)	320				2.4	(2.35)

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 38

Winnipeg, Canada (49.9°N, 97.4°W)								May 1950
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.3	310				2.0	---
01		5.0	330				3.0	---
02		5.0	340				3.0	---
03		4.8	380				3.0	---
04		4.8	320				2.9	---
05	---	5.2	300	---	---	2.0	---	(2.65)
06	---	6.0	260	---	110	2.5	---	(2.7)
07	490	6.2	230	4.7	105	3.8		2.7
08	500	6.6	220	4.9	100	3.4		2.5
09	550	6.8	220	5.0	100	3.6		2.5
10	540	6.8	210	5.2	100	3.9		2.4
11	500	6.9	210	5.4	100	4.0		2.5
12	510	6.9	220	5.5	100	4.0		2.4
13	520	6.9	210	5.5	100	4.0		2.4
14	500	7.0	220	5.5	100	4.0		2.4
15	500	7.0	220	5.4	100	3.9		2.4
16	490	7.0	220	5.1	100	3.7		2.4
17	450	7.3	230	5.0	100	3.3		2.5
18	(390)	7.6	240	4.6	105	3.0		2.7
19	---	7.8	270	---	110	2.5		2.7
20		7.2	290		---	2.0	2.4	2.7
21		7.0	280				3.0	(2.7)
22		6.6	290				3.2	---
23		6.0	300				3.0	---

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Wakkanai, Japan (45.4°N, 141.7°E)								May 1950
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		8.6	320					2.45
01		0.3	310					2.45
02		7.9	310					2.45
03		7.7	305					2.45
04		7.0	310				1.50	2.6
05	---	0.5	260	---			2.35	2.6
06	(480)	9.6	255	4.6			3.00	3.5
07	(490)	9.7	250	5.1			3.40	4.0
08	(495)	9.5	245	5.3			3.60	4.6
09	550	9.9	240	5.6			3.00	5.0
10	455	10.2	235	6.1			3.95	4.8
11	440	10.0	235	6.1			4.00	4.6
12	440	10.0	235	6.2			3.95	4.5
13	435	9.9	240	6.0			3.00	4.5
14	420	9.0	245	6.0			3.70	4.4
15	420	9.5	245	5.7			3.60	2.50
16	(410)	9.3	255	5.6			3.40	3.9
17		0.9	260				2.95	4.3
18		8.9	275				2.25	3.5
19		9.0	290					3.5
20		9.0	300					3.5
21		9.0	310					2.6
22		8.0	310					2.45
23		0.8	315					2.45

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 42

Akita, Japan (39.7°N, 140.1°E)								May 1950
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		9.2	320					2.50
01		9.0	310					2.55
02		8.5	300					2.50
03		8.1	300					2.55
04		8.0	335					2.45
05	---	9.0	270	---			2.00	2.60
06	(365)	10.2	250	---			2.95	3.5
07	345	10.8	250	5.2			3.45	4.4
08	350	10.6	250	5.7			3.70	4.8
09	390	10.9	245	6.0			3.95	5.0
10	405	11.2	240	6.4			4.00	4.8
11	410	11.6	240	6.6			4.05	4.8
12	410	11.8	240	6.3			4.05	4.9
13	400	11.6	245	6.4			4.05	4.5
14	400	11.5	245	6.2			4.00	5.0
15	370	11.2	250	6.0			3.80	4.6
16	355	10.6	250	---			3.50	4.3
17	(350)	10.0	260				2.95	5.2
18	---	9.7	290				2.00	5.2
19		9.6	295					4.3
20		9.2	305					3.9
21		9.3	330					3.1
22		9.3	330					2.7
23		9.3	330					2.4

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 43

Tokyo, Japan (35.7°N, 139.5°E)								May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		9.7	310				2.4	2.55	
01		9.5	300				2.5	2.60	
02		8.9	300				2.2	2.60	
03		8.4	300					2.55	
04		7.9	315					2.45	
05		8.7	265			2.30		2.65	
06		10.1	250			2.90	3.2	2.70	
07	(360)	10.8	250	---		3.30	4.7	2.70	
08	<375	11.0	245	---		3.65	5.5	2.55	
09	390	11.0	235	6.2		3.90	5.4	2.45	
10	390	11.8	230	6.3		4.00	4.8	2.50	
11	400	12.3	(230)	6.6		4.05	5.0	2.45	
12	390	12.4	<250	6.5		(4.05)	5.3	2.45	
13	400	12.3	240	6.4		(4.10)	4.8	2.50	
14	390	12.1	250	6.2		4.05	5.0	2.50	
15	360	12.0	250	6.4		3.80	4.9	2.55	
16	345	11.4	250	---		3.50	5.0	2.55	
17	330	11.0	260			3.00	4.9	2.60	
18	---	10.7	295			---	5.5	2.60	
19		10.0	305				5.9	2.60	
20		9.4	315				7.2	2.50	
21		9.6	330				5.0	2.40	
22		(9.9)	340				3.7	(2.45)	
23		9.9	320				3.9	2.50	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 45

Ibadan, Nigeria (7.4°N, 3.9°E)								May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(6.9)	415					---	
01		(6.8)	390					---	
02		<6.7	335					---	
03		(6.7)	280					(3.00)	
04		(6.3)	250					(3.30)	
05		(5.4)	245					3.20	
06		9.2	260		115	2.40	3.2	3.05	
07		(12.5)	245		110	3.20		3.00	
08		14.0	235		110	3.65		(2.05)	
09		14.6	225		110	4.00	8.5	2.60	
10		14.6	215		105	(4.20)	8.8	2.30	
11		14.3	210		105	(4.30)	8.8	(2.20)	
12		13.4	205		105	(4.30)	8.7	2.10	
13		12.6	200		105	(4.25)	8.8	2.10	
14		12.4	205		105	(4.10)	8.8	<2.10	
15		11.9	220		110	(3.80)	8.7	2.05	
16		11.7	240		110	3.40	7.0	2.10	
17		>11.6	260		115	2.75	3.2	(2.10)	
18		11.1	305		---	1.70		(2.15)	
19		>9.5	400					(2.00)	
20		>8.8	450					---	
21		(8.3)	490					---	
22		>7.9	440					(2.15)	
23		<7.9	450					0.8	---

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 47

Johannesburg, Union of S. Africa (26.2°S, 28.0°E)								May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.4	<280				<1.7	2.70	
01		4.4	<285				<1.8	2.70	
02		4.1	<285				<1.7	2.75	
03		4.1	(275)				<1.7	2.85	
04		3.9	<260				<1.7	2.85	
05		3.7	<280				<1.7	2.80	
06		3.9	<260				<1.7	2.80	
07		8.3	235			2.2		3.20	
08		11.6	225			3.0		3.20	
09		13.2	225			3.4		3.00	
10		14.1	220			3.6		2.95	
11		14.2	215			3.8		2.85	
12		14.0	215			4.0		2.75	
13		13.8	220			3.9		2.70	
14	---	13.9	230			3.8		2.70	
15		13.7	230			3.6		2.70	
16		13.3	235			3.0	3.2	2.70	
17		13.3	245			<2.4	2.6	2.80	
18		12.4	225			<1.9	<2.0	2.85	
19		10.9	230				<2.0	2.90	
20		9.7	230				<1.8	3.00	
21		7.6	230				<1.9	3.10	
22		5.7	235				<1.9	3.00	
23		4.5	<250				<1.8	2.85	

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 44

Yamagawa, Japan (31.2°N, 130.6°E)								May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(10.8)	300					3.0	(2.65)
01		10.8	290					3.0	2.70
02		9.8	270					3.3	2.80
03		8.9	250					2.5	2.70
04		8.5	280					2.9	2.65
05		8.4	295					2.8	2.60
06		9.2	250				2.20	2.8	2.90
07		10.1	240				3.00	3.7	2.90
08		10.3	240				3.50	5.6	2.75
09		10.8	240				3.80	5.7	2.65
10		11.5	230				4.00	6.3	2.50
11		12.5	230				4.05	5.9	2.55
12		12.5	230				4.10	5.7	2.55
13	(390)	13.0	225	6.7			4.15	5.1	2.60
14	375	13.2	245	6.5			4.10	5.7	2.60
15	380	12.7	240	6.6			4.00	5.7	2.60
16	(355)	12.5	250	6.5			3.75	5.8	2.60
17	(340)	12.5	250	---			3.30	5.9	2.60
18	---	11.8	255				2.60	5.8	2.65
19		11.2	280					5.8	2.70
20		(10.4)	300					5.8	(2.60)
21		(10.2)	320					5.7	(2.50)
22		(10.6)	320					4.3	(2.55)
23		10.9	310					4.5	2.60

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 46

Singapore, British Malaya (1.3°N, 103.8°E)								May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		13.2	245		---	---	3.1	2.80	
01		>11.6	225		---	---	<1.6	2.90	
02		9.8	235		---	---	<1.6	2.90	
03		8.4	240		---	---	<1.8	3.00	
04		7.3	240		110	---	<1.5	3.05	
05		6.3	230		---	---	<1.7	3.00	
06	---	7.8	290		---	---	1.70	2.7	2.85
07	---	11.9	255		120	>2.80	3.2	2.85	
08	---	14.6	245		115	3.50	3.8	2.80	
09	---	15.6	235		110	3.90	4.8	2.65	
10	---	(15.4)	225		105	4.10	4.7	2.45	
11	---	(15.0)	215		105	4.25		2.20	
12	---	>14.5	210		105	4.30		2.10	
13	---	>13.8	210		105	4.20		2.05	
14	---	13.4	210		110	<4.15		2.05	
15	500	13.5	230		110	3.85		2.10	
16	---	>13.0	245		115	(3.40)		2.10	
17	---	>13.3	255		115	2.80	3.0	2.20	
18	---	13.8	295		120	<1.70	3.0	2.25	
19	---	>13.5	350		---	---	3.0	2.30	
20	---	>13.2	350		---	---	<1.7	---	
21	---	(13.1)	285		135	---	2.2	---	
22	---	>13.4	245		---	---	3.3	---	
23	---	(13.8)	245		---	---	3.5	(2.80)	

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 48

Drisbane, Australia (27.5°S, 152.9°E)								May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		6.6	260					2.70	
01		6.6	260					2.70	
02		6.2	260					2.70	
03		5.8	260					2.70	
04		5.5	250					2.60	
05		5.3	260					2.70	
06		6.0	260			---	<2.10	2.80	
07		10.0	240			140	2.40	3.15	
08		>11.5	230			120	3.00	(3.15)	
09		>11.8	230			120	>3.40	---	
10		>12.0	230			120	>3.50	---	
11		>12.0	230			120	>3.50	---	
12		>11.8	230			120	>3.50	(2.80)	
13		>11.8	240			120	>3.45	(2.85)	
14		>11.6	240			120	>3.40	(2.75)	
15		>11.5	240			130	3.30	(2.85)	
16	(11.2)	240				120	2.80	2.85	
17		11.0	250			---	<2.30	2.80	
18		10.2	240			---	<2.18	2.80	
19		9.1	250					2.75	
20		8.9	260					2.75	
21		8.2	250					2.75	
22		7.3	250					2.80	
23		6.7	260					2.70	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 49  
Watheroo, W. Australia (30.3°S, 115.9°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	250					3.10
01		5.3	250					3.20
02		5.0	250					3.10
03		4.8	250					3.15
04		4.4	250					3.15
05		4.3	260					3.20
06		4.2	<250					3.20
07		6.6	245		145	1.85		3.40
08		>8.4	225		105	2.75		----
09		>8.4	230		100	3.15	>3.4	
10		>8.4	225		100	3.50		
11		>8.4	225		100	3.75		
12		>8.4	220		100	3.80		----
13		>8.4	220		100	3.00		----
14		>8.4	225		100	3.65		
15		>8.4	230		100	3.35	3.4	
16		>8.4	230		100	3.00		
17		>8.4	235		100	(2.30)		
18		>8.4	220		---	<1.25	2.0	
19		>7.0	220				1.6	----
20		>7.0	230					(3.30)
21		7.0	240					3.30
22		6.6	245					3.10
23		5.9	250					3.15

Time: 120.0°E.  
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 51  
Canberra, Australia (35.3°S, 149.0°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6	<240				2.2	2.80
01		>6.5	240				2.0	2.65
02		6.3	240				2.1	2.85
03		6.3	250				2.0	2.90
04		6.0	230				2.1	2.95
05		>5.3	220				2.0	2.85
06		(4.9)	235					3.00
07		>7.3	215		145	1.90		3.25
08		10.8	200		100	2.65	3.0	3.35
09		12.7	200		100	3.15	3.4	3.35
10		>13.2	200		100	3.50	3.7	3.30
11		>13.2	200		100	3.65	3.0	3.15
12		13.2	200		95	3.70	3.8	3.05
13		13.2	200		95	3.70	3.8	3.00
14		13.2	200		95	3.50	3.8	3.00
15		13.0	205		95	3.25	3.3	3.00
16		12.8	200		95	2.70	2.8	3.00
17		12.0	210		95	2.05	2.2	3.05
18		10.6	200				2.2	3.00
19		>9.2	220				1.8	3.00
20		(0.1)	215					2.95
21		7.6	220					2.95
22		>7.0	220					2.90
23		6.9	240					2.05

Time: 150.0°E.  
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 53  
Cape Hallett (72.3°S, 170.3°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	295		---	1.2		(2.55)
01		(4.4)	325		---	1.3		(2.45)
02		(4.3)	315		257	1.4		(2.50)
03		(4.2)	285		186	1.6		(2.40)
04		(4.2)	305		---	1.4		(2.45)
05		(4.6)	320		---	1.4		(2.50)
06		(4.7)	310		---	(1.3)		(2.40)
07		(6.3)	300		---	(1.4)	1.9	(2.60)
08		(6.6)	275		---	1.6	1.0	(2.75)
09		(7.8)	255		125	1.5		(2.90)
10		(7.7)	250		115	1.8		(2.85)
11		(8.2)	250		111	1.8	2.4	(3.00)
12		(8.3)	250		110	1.9	1.3	(2.90)
13		(0.6)	250		111	1.0	2.4	(2.80)
14		(9.1)	250		121	1.6	3.3	(2.75)
15		(10.0)	250		---	1.4	3.9	(2.75)
16		(9.4)	250		---	1.0	2.8	(2.70)
17		(9.2)	250		---	E	1.6	(2.65)
18		(9.0)	245		---	E		(2.65)
19		(9.5)	245		---	E		(2.65)
20		(0.9)	250		---	E		(2.65)
21		(8.2)	265		---	E		(2.60)
22		(5.3)	270		---	E		(2.70)
23		(5.5)	275		---	E		(2.50)

Time: 165.0°E.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 50  
Capetown, Union of S. Africa (34.1°S, 18.3°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.6	<290				<1.7	2.70
01		3.6	<310				<1.8	2.60
02		3.6	<310				<1.8	2.55
03		3.6	<330				2.0	2.65
04		3.8	<290				<1.7	2.80
05		3.6	<270				<1.6	2.85
06		3.4	<290				<1.6	2.80
07		4.1	<250			<1.5	<1.5	2.60
08		8.4	235			2.2		3.10
09		11.0	235			2.9		3.05
10		12.9	230			3.2		3.00
11		13.9	230			3.6		2.90
12		14.2	230			3.8	4.0	2.80
13	---	14.2	225			3.8		2.75
14	---	14.3	235			3.8		2.70
15	---	14.3	240			3.5		2.70
16		14.0	240			3.1		2.70
17		13.8	240			2.6	2.8	2.80
18		13.2	235			---	2.2	2.80
19		11.6	230			<1.6	<1.9	2.80
20		10.3	230				1.8	2.95
21		8.7	225				<1.8	3.05
22		5.7	(230)				<1.7	3.05
23		3.7	<250				<1.9	2.80

Time: 30.0°E.  
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 52  
Falkland Is. (51.7°S, 57.8°W) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4	315					2.3
01		4.3	340				1.3	2.35
02		4.2	340					2.35
03		4.2	305					2.45
04		4.1	300					2.5
05		4.3	290					2.45
06		4.0	250					2.4
07		5.8	265			180	1.7	---
08		9.6	230			140	2.25	3.15
09		12.2	225			120	2.6	3.2
10		13.0	225			115	2.9	3.4
11		>14.4	235			110	3.0	3.6
12		13.8	225			---	3.1	3.5
13		13.1	230			---	3.0	2.95
14		12.6	240			---	2.0	3.1
15		11.7	235			---	2.55	2.6
16		9.6	225			---	2.0	3.8
17		8.7	230			---	---	3.1
18		6.6	220					3.1
19		5.4	235					2.0
20		4.6	250					<1.5
21		4.0	<295					<1.4
22		4.1	<315					<1.4
23		4.3	<340					<1.4

Time: 60.0°W.  
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 54  
Scott Base (77.8°S, 166.8°E) May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.5)	<300				<2.3	(2.35)
01		5.5	280				<2.7	2.55
02		(5.9)	290				<2.6	(2.40)
03		(5.6)	290				<2.5	2.60
04		5.6	290				<2.2	2.70
05		5.0	280				<2.5	(2.50)
06		5.1	280				<2.3	2.50
07		5.0	(290)				<2.3	2.50
08		5.4	<260				<2.3	2.60
09		6.6	260				<2.3	2.70
10		6.9	250				<2.3	2.05
11		7.0	250				<2.3	2.80
12		7.9	<260				<2.5	2.65
13		>8.0	<260				<2.9	2.75
14		9.0	250				<2.7	(2.70)
15		8.6	270				<2.3	2.60
16		9.0	270				<2.5	2.60
17		9.0	270				<2.3	2.70
18		8.1	260				<2.2	2.55
19		9.0	270				<2.2	(2.65)
20		>8.0	280				<2.5	(2.55)
21		7.2	290				<2.4	2.70
22		6.6	<300				<2.5	2.70
23		(6.2)	300				<2.5	2.50

Time: 165.0°E.

Table 55

Kiruna, Sweden (67.8°N, 20.3°E)							
April 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.0	425				5.0 2.3
01		(6.0)	450				4.0 2.3
02		6.0	435				4.6 2.3
03		5.6	365				4.0 2.4
04		5.6	310			1.8	2.0 2.4
05		5.8	295		120	2.1	3.4 2.4
06		6.1	265		110	2.5	2.4 2.4
07		7.0	255	4.5	115	2.8	2.5 2.5
08	(525)	7.0	250	5.0	110	3.0	2.45 2.4
09	(460)	7.5	240	5.2	110	3.1	2.4 2.4
10	460	8.0	245	5.4	110	3.2	2.4 2.4
11	455	8.5	245	5.5	110	3.3	2.4 2.4
12	480	8.8	240	5.8	110	3.3	2.4 2.4
13	460	8.5	240	5.4	110	3.2	2.4 2.4
14	470	8.6	245	5.2	110	3.2	2.45 2.4
15	(430)	8.2	250	5.0	110	3.0	2.5 2.6
16		7.8	255		110	2.9	2.6 2.6
17		7.3	280		115	2.7	3.6 2.6
18		7.0	300		120	2.2	3.6 2.6
19		6.7	330			1.8	3.8 2.55
20		6.0	360				4.4 2.4
21		6.0	395				5.4 2.4
22		6.0	410				5.0 2.3
23		5.8	420				5.0 2.3

Time: 15.0°E.

Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 57

Johannesburg, Union of S. Africa (26.2°S, 28.0°E)							
April 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.4	260				2.3 2.75
01		5.6	<270				2.6 2.60
02		5.5	<280				2.2 2.65
03		5.2	<265				<1.8 2.70
04		4.8	<260				<1.7 2.75
05		4.2	<270				<1.8 2.75
06		4.8	<290			<1.7	<1.8 2.60
07		9.4	235			2.5	3.10 2.75
08		12.4	230			3.1	3.05 2.60
09		14.0	230			3.5	2.90 2.60
10		>14.0	230			3.9	2.80 2.60
11		>14.0	225				2.75 2.60
12		(13.9)	220				4.0 2.60
13		>14.0	225				2.55 2.55
14		>14.0	240				2.55 2.55
15		13.7	245			3.7	4.0 2.50
16		13.4	245			3.3	4.0 2.55
17		13.2	250			2.6	3.2 2.60
18		12.9	245			<2.0	2.5 2.70
19		11.6	245			2.3	2.70 2.70
20		10.8	250			<2.4	2.80 2.70
21		9.9	250			<2.3	2.90 2.70
22		8.2	240			2.6	2.90 2.70
23		6.7	250			<2.5	2.80 2.70

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 59

Falkland Is. (51.7°S, 57.8°W)							
April 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.6	350				<1.4 2.20
01		6.3	350				1.4 2.15
02		6.0	345				2.20 2.20
03		5.8	340				2.20 2.20
04		>5.6	350				1.3 2.20
05		5.2	360				2.05 2.05
06		5.2	345		180	1.50	2.15 2.15
07		8.2	250		140	2.10	(2.95) 2.95
08		11.7	230		120	2.60	2.95 2.95
09		>14.2	230		115	3.00	3.6 2.95
10		>15.0	235		110	3.20	4.4 2.95
11		>15.0	230		110	3.40	4.0 2.95
12		>15.0	235		110	3.40	4.2 2.95
13		14.8	230		105	3.35	3.8 (2.70) 2.75
14		>14.2	235			3.20	2.75 2.75
15		13.8	245		120	2.90	3.4 2.80
16		13.0	245			2.60	3.4 2.90
17		11.9	245			1.90	2.2 2.90
18		10.5	235				3.1 2.95
19		8.3	230				2.7 2.95
20		6.8	250				<1.7 2.70
21		6.6	270				<1.5 2.55
22		6.7	290				<1.4 2.40
23		6.6	305				<1.4 2.30

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 56

Singapore, British Malaya (1.3°N, 103.8°E)							
April 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		13.8	250				2.5 2.80
01		11.5	240				<1.6 2.75
02		10.7	245		(135)	----	<1.4 2.70
03		10.2	245				2.3 2.80
04		9.4	245				2.9 3.00
05		8.2	235		(110)	----	2.9 3.10
06		8.4	265		120	1.70	3.0 2.85
07		12.2	255		120	2.80	3.0 2.95
08		14.7	250		115	3.50	3.8 2.80
09		15.2	240		110	3.90	4.2 2.55
10	(650)	15.1	225		110	4.20	2.20 (2.20)
11		>15.1	215		110	4.35	2.4 (2.20)
12		14.7	210	5.7	110	4.40	2.00 2.05
13	(490)	14.3	215	(5.7)	110	(4.40)	2.05 2.00
14	(550)	14.3	230	(5.5)	110	(4.30)	2.00 2.00
15		14.4	230		110	3.95	2.00 2.10
16		14.4	245		110	3.50	2.10 2.10
17		14.5	260		115	2.80	2.10 2.10
18		>14.5	300		(100)	1.70	2.0 2.10
19		>13.9	390				3.0 (2.10)
20		----	390		145	----	<1.5 2.00
21		----	305		135	----	<1.7 2.00
22		----	255		120	----	2.8 2.00
23		14.4	245				2.3 (2.55)

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 58

Capetown, Union of S. Africa (34.1°S, 18.3°E)							
April 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.6	<260				<2.0 2.70
01		5.2	<295				<1.8 2.50
02		5.0	<305				2.2 2.45
03		5.0	<295				<1.9 2.60
04		4.9	<265				<1.8 2.70
05		4.2	<275				<1.8 2.65
06		4.0	<290				<1.6 2.50
07		5.7	270			<1.7	2.65 2.65
08		10.0	235			2.5	3.00 3.00
09		12.7	235			3.1	2.95 2.95
10		14.4	230			3.5	2.90 2.90
11		(14.6)	230			3.8	4.0 (2.80) 2.80
12		14.7	230			3.9	4.1 2.70
13		14.8	230			3.9	4.0 2.60
14		14.8	245			3.9	2.55 2.55
15		14.4	245			3.8	2.55 2.55
16		14.1	245			3.4	2.60 2.60
17		14.0	245			2.9	2.60 2.60
18		13.8	245			2.1	2.6 2.70
19		12.8	230			<1.7	<1.9 2.70
20		11.3	240				2.0 2.75
21		9.8	<240				1.9 2.85
22		8.2	<245				2.5 2.90
23		6.6	<245				2.1 2.90

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 60

Natal, Brazil (5.3°S, 35.1°W)							
March 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		>9.8	(230)				----
01		----	----				----
02		----	----				----
03		----	----				----
04		----	----				----
05		----	----				----
06		----	----				----
07		----	----				----
08		----	----				----
09		(15.0)	(240)				(2.80) 2.80
10		(15.6)	<230				----
11		(15.4)	<245				----
12		(15.35)	(225)				(2.20) 2.20
13		(14.5)	<230				(2.25) 2.25
14		>14.6	<250				(2.20) 2.20
15		(14.2)	(230)				----
16		(14.0)	<240				(2.20) 2.20
17		(14.0)	260				(2.25) 2.25
18		>12.85	(205)				----
19		>10.0	(360)				----
20		>7.1	(410)				----
21		(9.0)	(350)				----
22		(9.1)	(205)				----
23		>9.3	(255)				----

Time: 30.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 32.4 seconds.

Note: Around equinox, height scale was expanded.



Table 61

February 1950

Campbell 1, (52.5°S, 169.2°E)

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.2	340				3.2	(2.35)
01		5.4	340				3.0	(2.30)
02		4.3	350				2.4	2.40
03		(4.4)	---				3.4	(2.40)
04		4.2	(310)		145	1.5	2.1	2.40
05		4.0	300		110	2.1	2.2	2.80
06		5.0	260	---	110	2.7		2.05
07	---	6.5	240	---	110	3.2		2.65
08	---	(6.9)	240	5.4	110	3.4		(2.70)
09	(450)	7.6	240	5.4	105	3.6		(2.75)
10	(410)	0.0	(220)	5.7	105	3.8		2.70
11	440	0.3	(220)	6.0	110	3.9		2.55
12	420	0.4	220	5.8	105	3.9		2.65
13	420	0.2	230	5.0	105	4.0		2.50
14	410	0.1	230	5.7	110	3.9		2.50
15	440	0.5	230	5.5	105	3.0		2.50
16	(400)	0.1	250	5.0	110	3.5		2.50
17	(400)	0.5	250	---	110	3.2	3.4	(2.60)
18		0.6	270		115	2.6	3.2	(2.60)
19		6.0	300		125	2.0		(2.50)
20		(8.7)	350		---	1.5	3.2	---
21		(6.5)	320		---	---	3.5	(2.40)
22		(5.6)	310				3.0	---
23		(6.3)	340				3.4	(2.35)

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 63

December 1957

Godhavn, Greenland (69.3°N, 53.5°W)

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.6)						2.60
01		(5.4)						(2.55)
02		(5.65)						(2.55)
03		(4.7)						(2.60)
04		(4.8)						(2.55)
05		(4.9)						---
06		(4.75)						(2.42)
07		(4.8)						(2.40)
08		(5.4)						(2.60)
09		(5.7)			---	---		(2.65)
10		(6.9)			---	---		(2.65)
11		(7.3)			---	---		2.65
12		(7.3)			---	---		(2.75)
13		(7.3)			119	---		(2.80)
14		(6.8)			---	---		(2.48)
15		(6.8)						(2.60)
16		(6.4)						(2.60)
17		(6.1)						2.42
18		(6.3)						(2.50)
19		(6.6)						2.50
20		(6.4)						2.50
21		(6.3)						(2.50)
22		(6.4)						(2.45)
23		(5.8)						(2.55)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 65

November 1957

Lindau/Harz, Germany (51.6°N, 10.1°E)

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.30	300					2.37
01		5.87	300					2.34
02		5.79	304					2.35
03		5.65	293					2.46
04		5.47	282					2.42
05		4.77	265					2.55
06		4.38	248					2.56
07		5.85	242					2.45
08		9.58	232		127	2.15	2.8	2.82
09		13.15	227		110	2.64	3.3	2.88
10		14.80	225		108	2.93	3.5	2.87
11		15.65	229		106	3.20	3.5	2.84
12		15.50	227		106	3.22		2.75
13		15.35	227		108	3.18	3.4	2.70
14		15.10	231		111	3.02	3.6	2.70
15		14.57	230		114	2.66	3.5	2.72
16		13.80	230		---	2.07	3.0	2.74
17		12.90	227		---	---	3.4	2.74
18		11.19	228					2.72
19		9.62	232					2.70
20		8.06	234					2.62
21		6.97	259					2.47
22		6.75	260					2.48
23		6.50	301					2.44

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 62

January 1958

Moscow, U.S.S.R. (55.5°N, 37.3°E)

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	300				<1.4	2.35
01		4.3	320				<1.3	2.40
02		4.2	310					2.40
03		4.0	305					2.50
04		3.7	280					2.55
05		3.7	270					2.60
06		3.4	270				E	<1.3
07		5.0	265				E	2.65
08		0.0	245			2.0	2.4	2.90
09		11.5	235			2.5		2.90
10		13.6	240			2.8	2.8	2.90
11		14.5	235			3.0	3.2	2.90
12		15.0	240			3.0	3.0	2.85
13		15.0	235			2.9	3.2	<2.85
14		14.5	235			2.6	2.9	2.80
15		13.9	240			2.2		2.80
16		13.0	230			1.6		2.85
17		10.9	220			E	<1.4	2.85
18		8.6	225				<1.5	2.85
19		7.5	245				<1.3	2.75
20		6.1	260				<1.4	2.70
21		5.2	275				<1.6	2.60
22		4.0	275				<1.4	2.55
23		4.7	300				<1.3	2.45

Time: 30.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 64

November 1957

Godhavn, Greenland (69.3°N, 53.5°W)

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.1)						(2.65)
01		(6.0)						(2.55)
02		(5.85)						---
03		(5.6)						---
04		(4.8)						---
05		(5.1)						---
06		(4.95)						---
07		(5.65)						---
08		(6.0)						---
09		(7.55)			---	---		(2.78)
10		(8.6)			---	(2.00)		(2.85)
11		(9.2)			129	(2.15)		(2.90)
12		(8.95)			<131	(2.15)		(2.82)
13		(8.05)			<140	(2.15)		(2.70)
14		(7.5)			<152	1.95		(2.80)
15		(8.3)			---	---		2.75
16		(7.8)						(2.60)
17		(7.7)						(2.45)
18		(7.2)						(2.45)
19		(6.3)						(2.50)
20		(7.0)						(2.35)
21		(6.5)						(2.45)
22		(6.4)						(2.55)
23		(5.5)						(2.50)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 66

July 1957

Ellsworth (77.7°S, 41.1°W)

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.0	360				3.7	2.50
01		(2.2)	365				3.5	(2.50)
02		(2.9)	370				2.0	(2.50)
03		(3.7)	360				2.0	2.50
04		(3.8)	360				1.6	(2.40)
05		(3.4)	325				1.4	(2.50)
06		3.3	310				1.5	2.55
07		2.85	260				1.2	2.70
08		2.9	245					2.85
09		3.1	245					3.00
10		3.95	250					3.00
11		5.1	<225				1.5	3.10
12		4.8	215					3.12
13		5.0	220					3.15
14		4.4	220					3.18
15		4.3	220					3.35
16		3.4	230					3.25
17		2.5	270					3.05
18		2.2	305					2.88
19		(1.75)	330				1.2	2.70
20		1.9	350				2.4	2.68
21		1.95	370				3.1	2.48
22		2.0	380				1.2	(2.55)
23		(2.35)	370				2.3	(2.60)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 67

Byrd Station (00.0°S, 120.0°W)							
July 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(5.4)	390				3.3 (2.45)
01		(4.3)	405				4.0 (2.35)
02		(5.45)	<305				3.5 (2.50)
03		(4.4)	360				3.3 (2.45)
04		(4.3)	320				3.3 (2.50)
05		(3.6)	320				2.0 (2.60)
06		3.4	300				2.5 2.65
07		3.0	300				1.6 2.70
08		2.7	<305				1.3 2.78
09		2.5	310				1.4 2.82
10		3.2	290				2.75
11		(3.5)	300				1.4 (2.70)
12		3.3	290				1.5 2.70
13		3.3	305				1.6 2.60
14		(3.2)	340				2.5 (2.55)
15		(3.1)	350				2.0 2.50
16		(3.3)	390				3.3 2.55
17		(3.4)	405				3.4 (2.42)
18		(4.1)	425				3.5 (2.35)
19		(3.0)	405				3.3 (2.38)
20		(4.35)	(350)				4.0 (2.35)
21		(6.2)	(335)				3.5 (2.40)
22		(6.45)	340				3.9 (2.45)
23		(5.0)	365				3.4 (2.30)

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 69

Macquarie I. (54.5°S, 159.0°E)							
May 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.4)	300				4.5 (2.5)
01		(4.2)	300				3.8 (2.6)
02		(4.2)	290				3.4 (2.5)
03		(4.2)	280				2.6 (2.55)
04		4.4	290				2.0 2.6
05		3.8	270				2.55
06		4.4	260				2.7
07		5.8	250			<1.0	2.0 2.9
08		>7.8	240			2.3	3.0
09		>9.0	240			2.6	---
10		>11.0	240			2.9	(2.9)
11		(11.6)	240			3.0	(2.9)
12		(12.5)	240			3.0	(2.8)
13		0	240			2.8	---
14		>11.0	240			2.5	---
15		>11.0	240			2.1	---
16		>9.0	240			<1.5	2.0 ---
17		(6.0)	250			<1.5	2.7 ---
18		(5.5)	270			3.2	(2.5)
19		(4.2)	290			3.4	(2.6)
20		---	300			4.2	---
21		---	300			4.8	---
22		>5.0	300			4.5	---
23		(4.9)	300			4.4	(2.4)

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 71

Tananarive, Madagascar (18.9°S, 47.6°E)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00		7.3					2.1 2.80
01		6.5					1.9 2.90
02		6.2					2.2 2.85
03		5.6					1.6 3.00
04		4.3					1.6 3.05
05		3.6					2.80
06		5.0					3.00
07		(305)	6.7			121 1.95	3.10
08		330	7.4		5.00	105 3.20	2.90
09		340	8.3		5.25	105 3.55	2.80
10		360	8.9		5.50	103 3.80	2.65
11		370	9.4		5.50	102 3.90	2.65
12		360	10.1		5.45	101 3.95	2.75
13		340	10.3		5.50	101 3.95	2.80
14		320	10.3		5.40	101 3.85	2.85
15		320	10.0		5.20	103 3.65	2.85
16		315	9.5		5.00	105 3.30	2.90
17		300	9.0		4.50	109 2.85	2.90
18		265	9.0		115	2.10 3.0	2.95
19			8.4		---	1.45 3.0	2.85
20			8.1			2.4	2.90
21			8.0			3.0	2.85
22			7.7			1.9	2.80
23			7.6			2.5	2.85

Time: Local.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 60

Pole Station (90.0°S)							
July 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.5)	260				(2.55)
01		(4.45)	260				(2.75)
02		(4.85)	270				(2.55)
03		(5.0)	270				(2.75)
04		(5.7)	270				(2.45)
05		(4.05)	270				----
06		(4.95)	275				(2.55)
07		(5.0)	295				(2.55)
08		(5.1)	300				(2.45)
09		(5.3)	320		---	---	(2.50)
10		(4.75)	310		---	---	(2.70)
11		(4.4)	290		---	---	(2.68)
12		(4.4)	280		---	---	(2.90)
13		(4.0)	(280)		---	---	2.9
14		(4.15)	315		---	---	2.3 (3.00)
15		(3.6)	300		---	---	(2.90)
16		(4.0)	295		---	---	(2.90)
17		(3.55)	310		---	---	----
18		(3.7)	285		---	---	----
19		(3.9)	290		---	---	----
20		(4.2)	270		---	---	1.9
21		(3.75)	240		---	---	2.0
22		(3.7)	260		---	---	----
23		(3.9)	<270		---	---	(2.90)

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 70

Dakar, French W. Africa (14.1°N, 17.4°W)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00		11.4					3.23
01		9.9					3.30
02		8.6					3.30
03		6.7					3.27
04		4.6					3.02
05		4.4					3.08
06		4.3					3.23
07		8.0			123	1.55	3.33
08	255	10.8		4.20	111	2.70	3.42
09	260	12.7		4.70	109	3.20	3.52
10	265	12.6		4.90	107	3.45	3.36
11	290	12.5		5.15	107	3.55	3.12
12	320	12.6		5.20	107	3.60	2.94
13	320	13.2		5.20	107	3.60	2.94
14	310	13.0		5.00	107	3.50	2.93
15	310	12.8		4.85	109	3.30	4.0
16	310	13.0		4.30	111	3.00	3.5
17	---	13.1		---	113	2.40	3.6
18		13.2			115	1.80	3.5
19		13.2					2.3
20		13.6					4.2
21		13.7					2.96
22		13.3					3.20
23		11.3					3.23

Time: Local.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 72\*

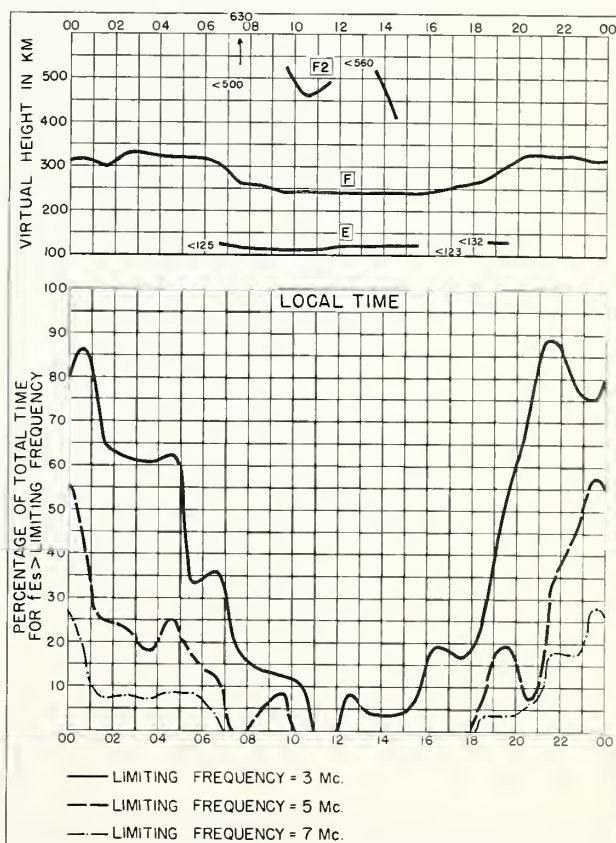
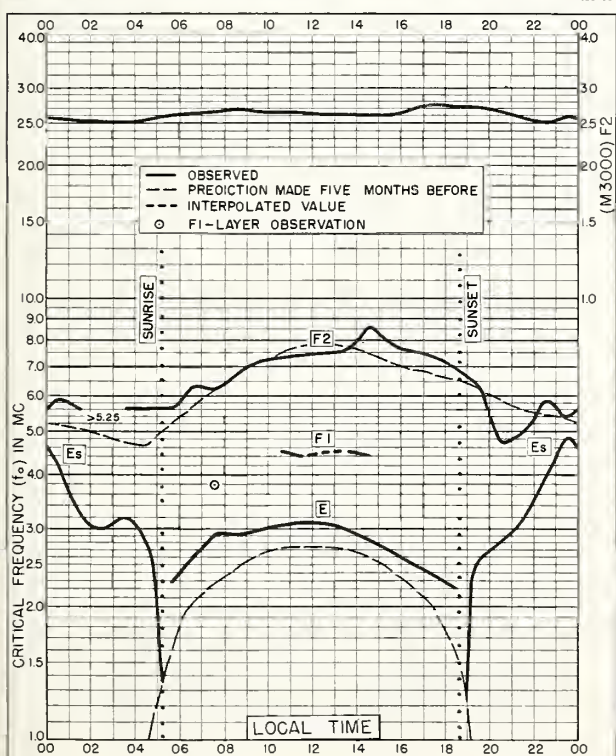
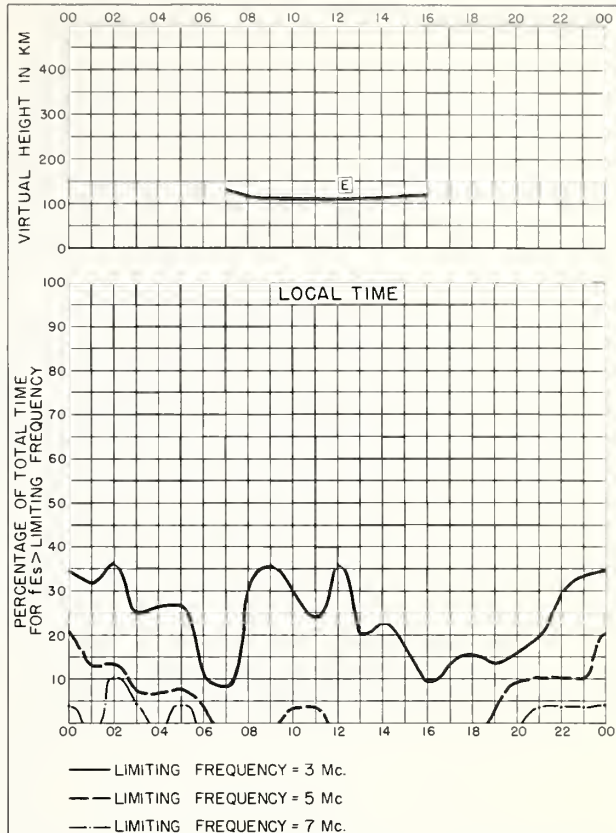
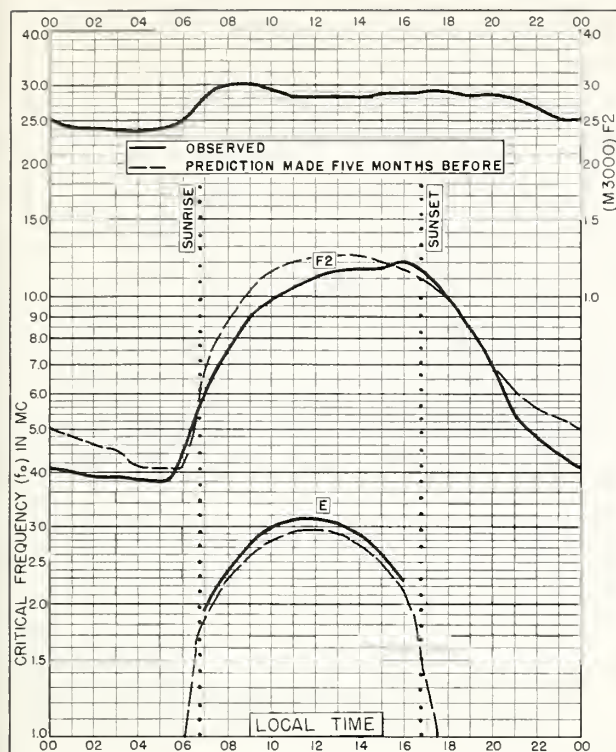
Campbell I. (52.5°S, 169.2°E)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00							
01							
02							
03							
04							
05	270	5.0	240	3.9	115	2.4	2.9
06	290	5.5	240	4.4	110	2.8	3.0
07	320	6.3	230	4.5	115	3.0	3.0
08	320	6.5	210	4.8	110	3.2	2.9
09	340	6.7	210	4.8	110	3.4	2.9
10	350	6.9	220	4.9	110	3.5	3.6
11	390	6.8	220	5.0	110	3.7	2.8
12	360	6.8	220	5.0	110	3.5	2.8
13	360	6.8	210	4.9	110	3.6	2.8
14	360	7.0	230	4.9	110	3.5	2.7
15	350	7.0	220	4.9	110	3.4	2.6
16	340	7.1	220	4.6	110	3.2	2.8
17	320	7.3	230	4.4	120	3.0	2.9
18	290	7.2	250	4.0	120	2.5	2.8
19	280	7.2	250	3.0	130	2.1	2.8
20	260	7.0					2.7
21	280	6.9					2.5
22	280	6.6					2.6
23	290	6.1					2.7

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

\*Observations taken on a 19-hour schedule.





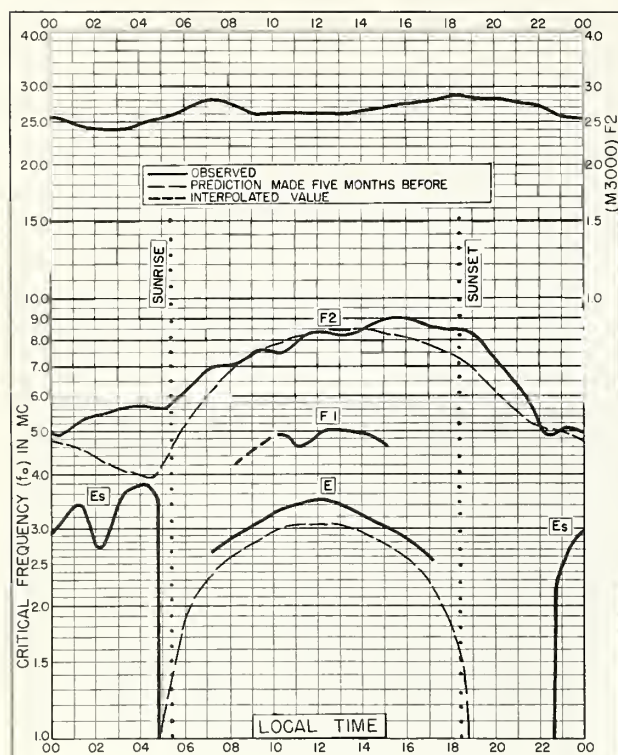


Fig. 5. FAIRBANKS, ALASKA  
64.9°N, 147.8°W SEPTEMBER 1958

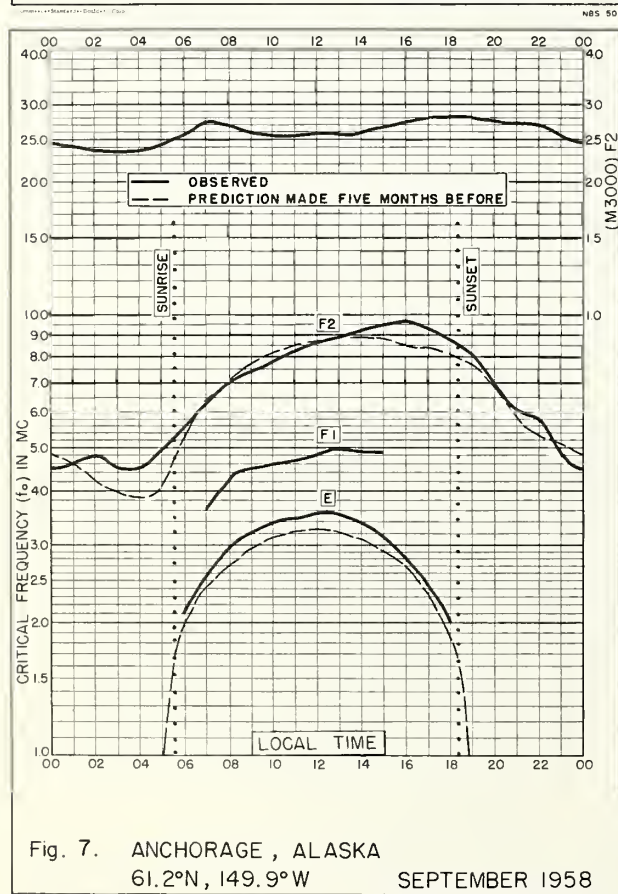


Fig. 7. ANCHORAGE, ALASKA  
61.2°N, 149.9°W SEPTEMBER 1958

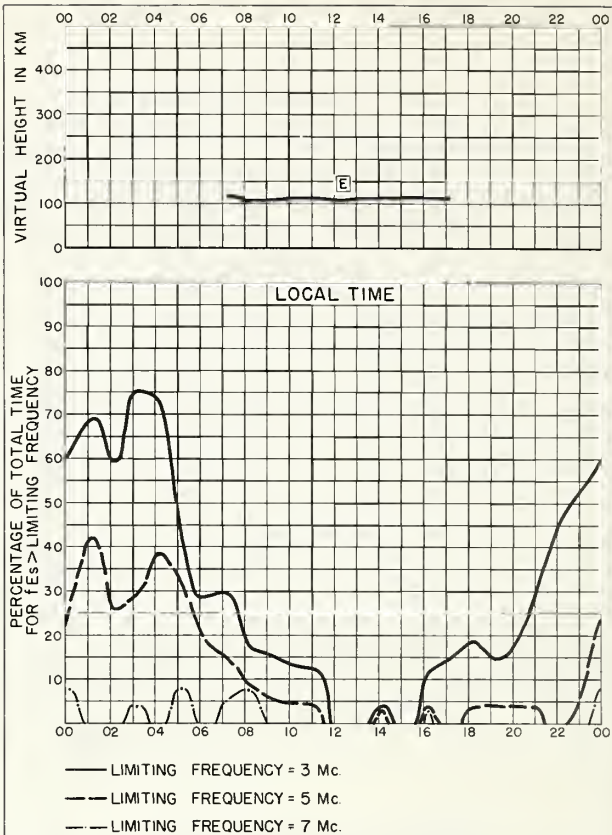


Fig. 6. FAIRBANKS, ALASKA SEPTEMBER 1958

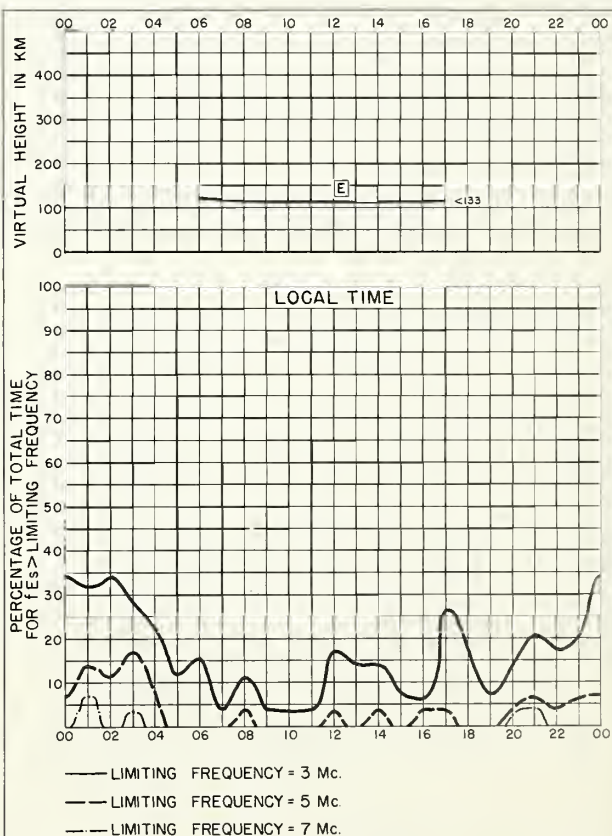


Fig. 8. ANCHORAGE, ALASKA SEPTEMBER 1958



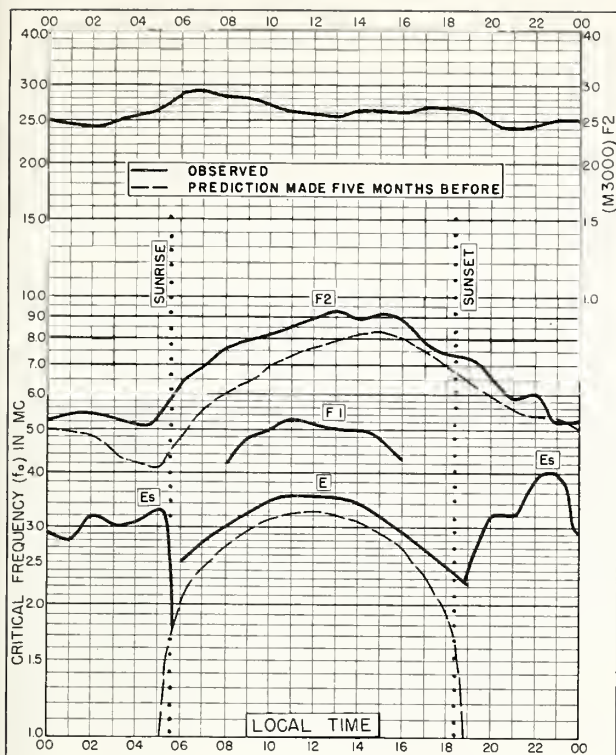


Fig. 9. NARSARSSUAK, GREENLAND  
61.2°N, 45.4°W SEPTEMBER 1958

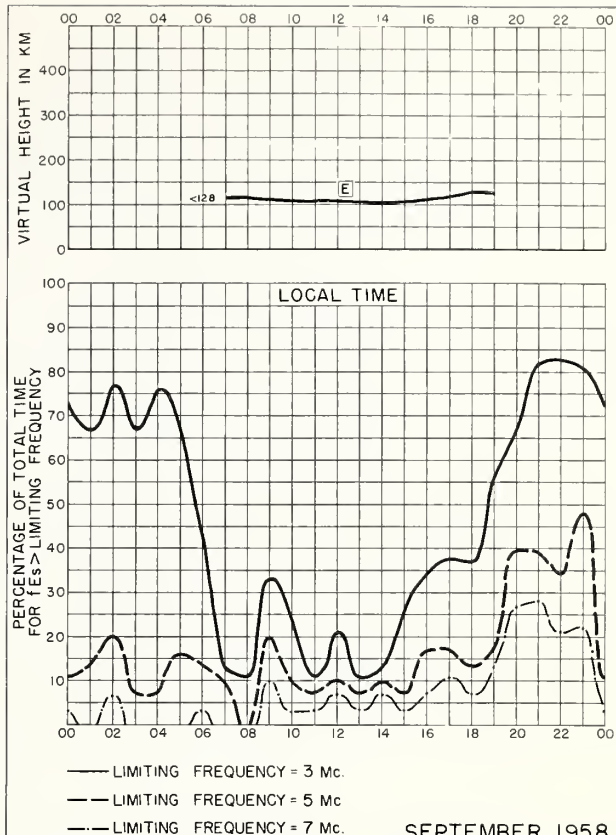


Fig. 10. NARSARSSUAK, GREENLAND SEPTEMBER 1958

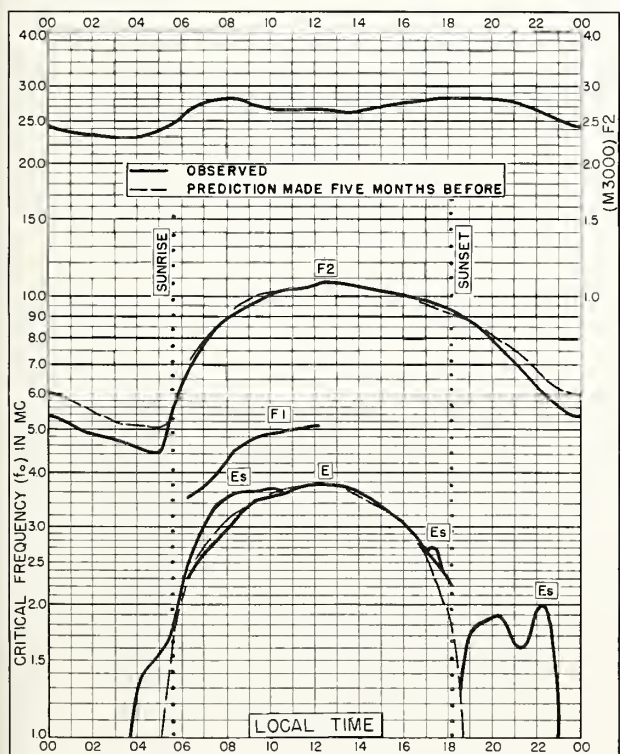


Fig. 11. ADAK, ALASKA  
51.9°N, 176.6°W SEPTEMBER 1958

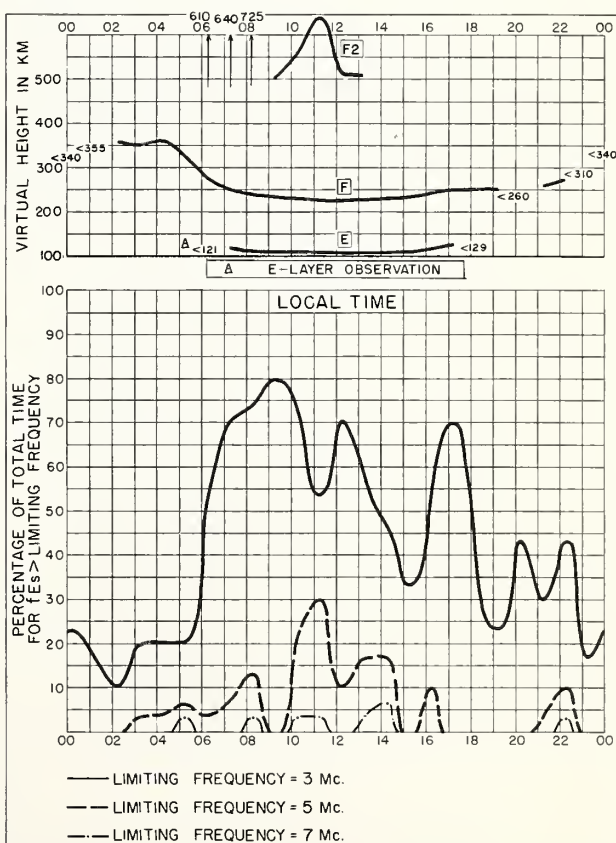


Fig. 12. ADAK, ALASKA SEPTEMBER 1958

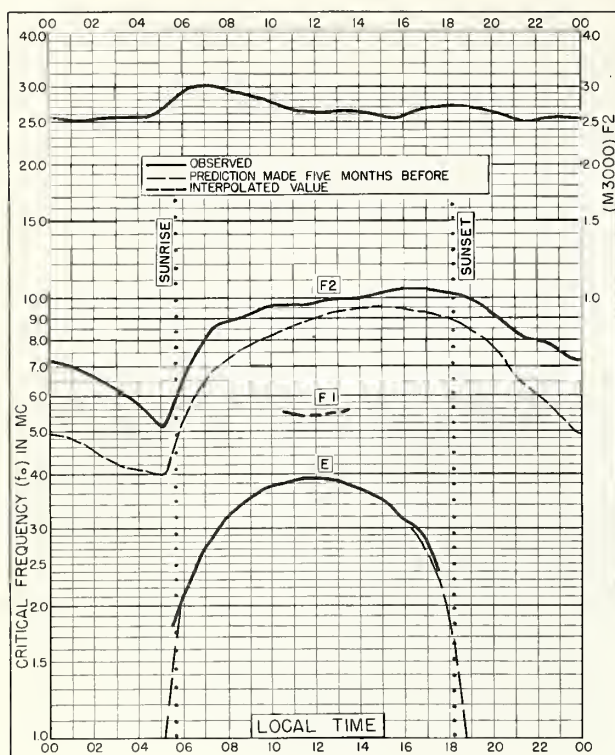


Fig. 13. ST. JOHN'S, NEWFOUNDLAND  
47.6°N, 52.7°W SEPTEMBER 1958

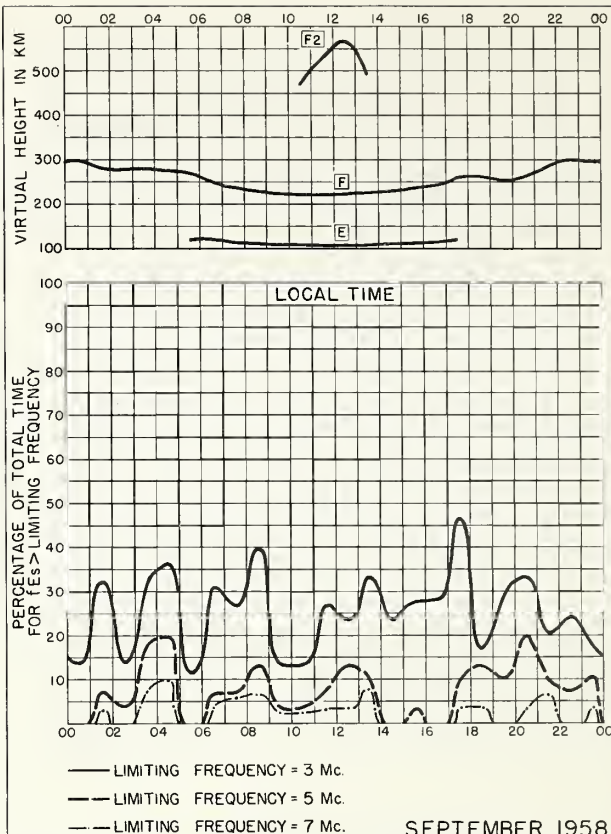


Fig. 14. ST. JOHN'S, NEWFOUNDLAND

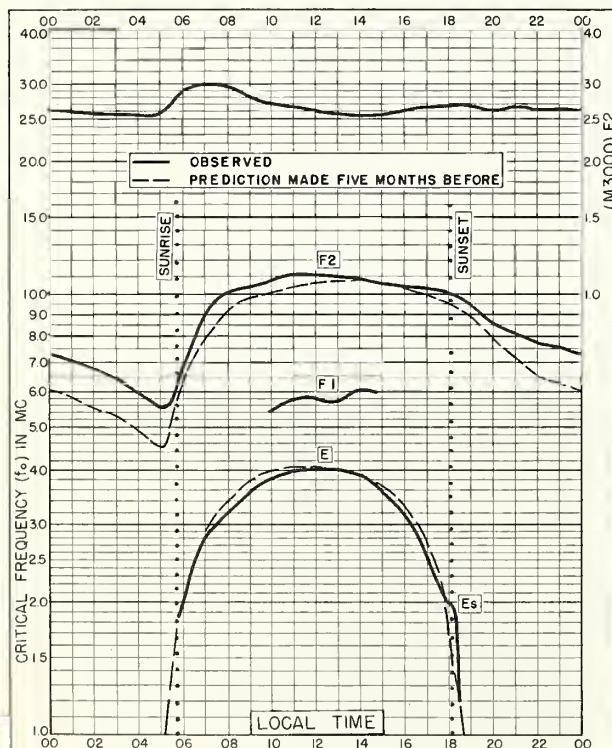


Fig. 15. WASHINGTON, D. C.  
38.7°N, 77.1°W SEPTEMBER 1958

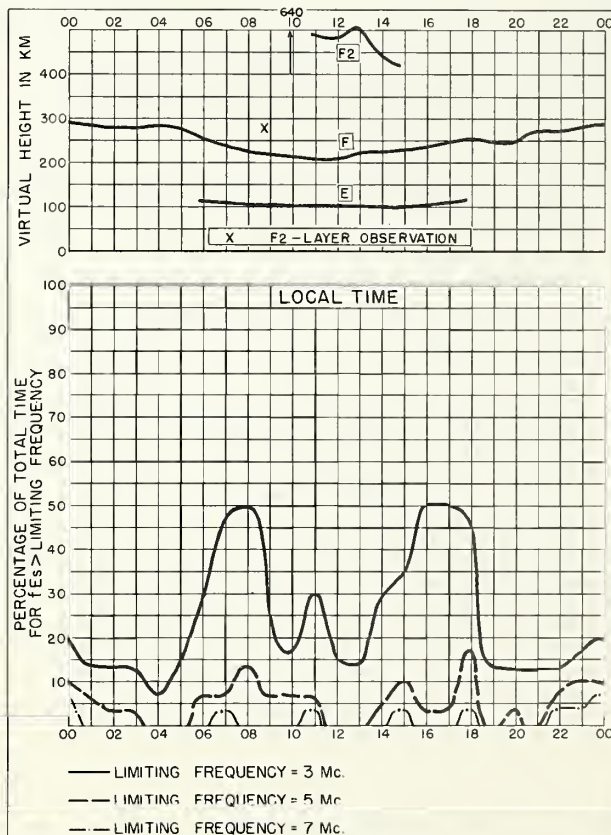


Fig. 16. WASHINGTON, D. C. SEPTEMBER 1958



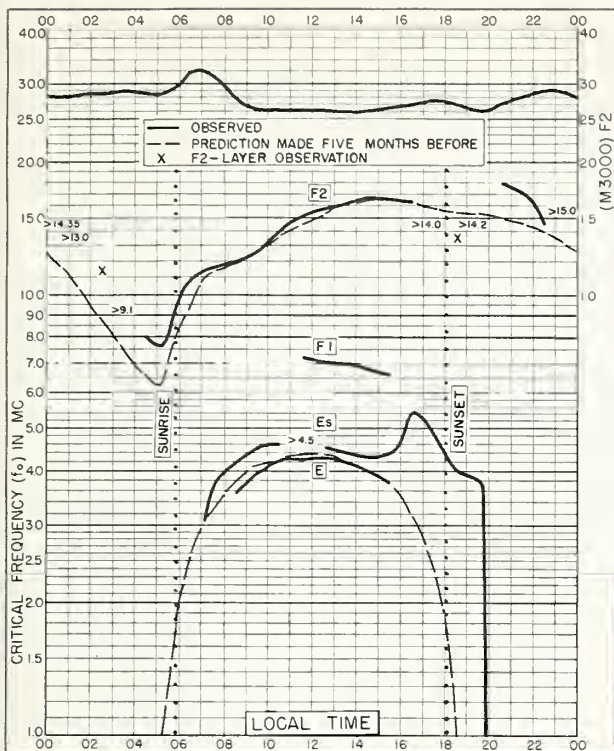


Fig. 17. OKINAWA I.  
26.3°N, 127.8°E

SEPTEMBER 1958

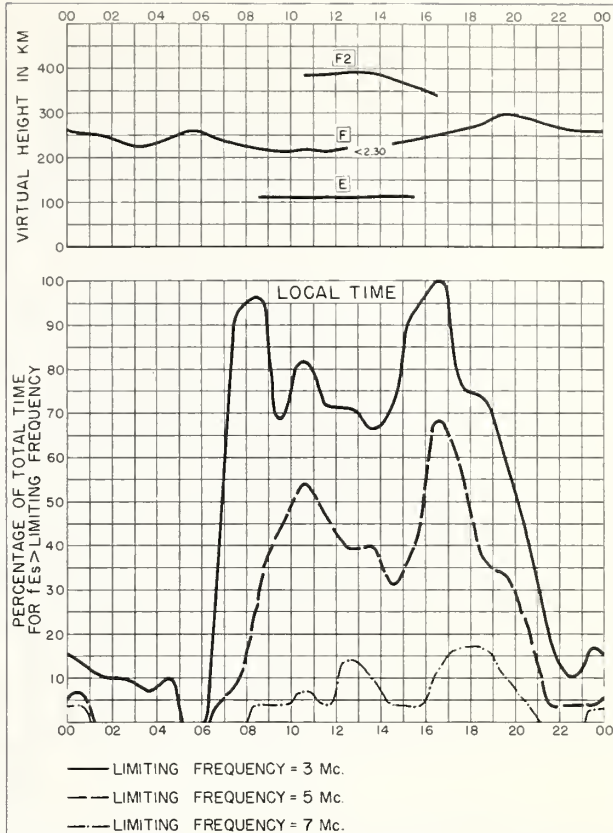


Fig. 18. OKINAWA I.

SEPTEMBER 1958

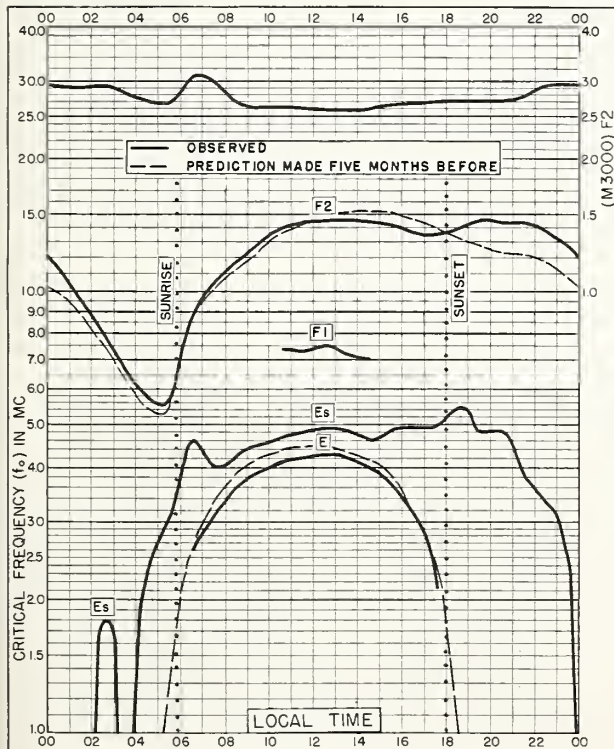


Fig. 19. MAUI, HAWAII  
20.8°N, 156.5°W

SEPTEMBER 1958

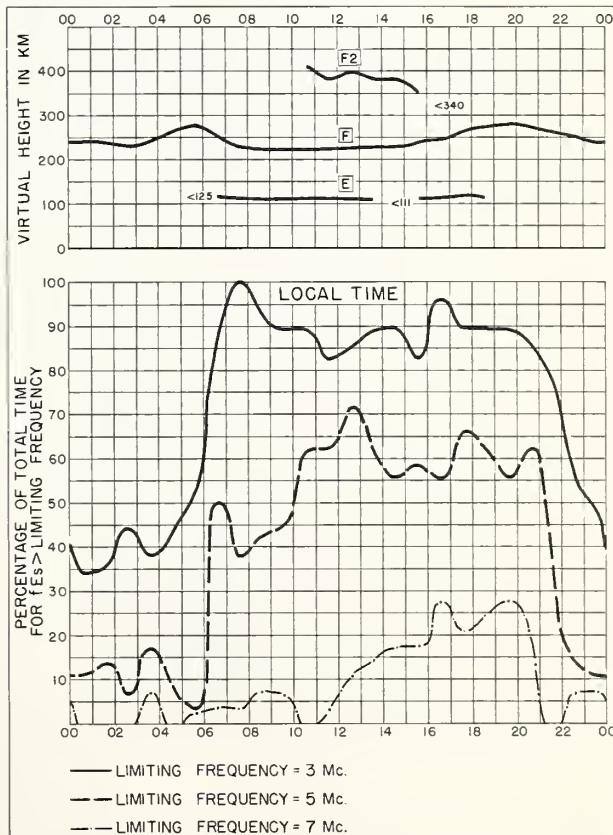


Fig. 20. MAUI, HAWAII

SEPTEMBER 1958

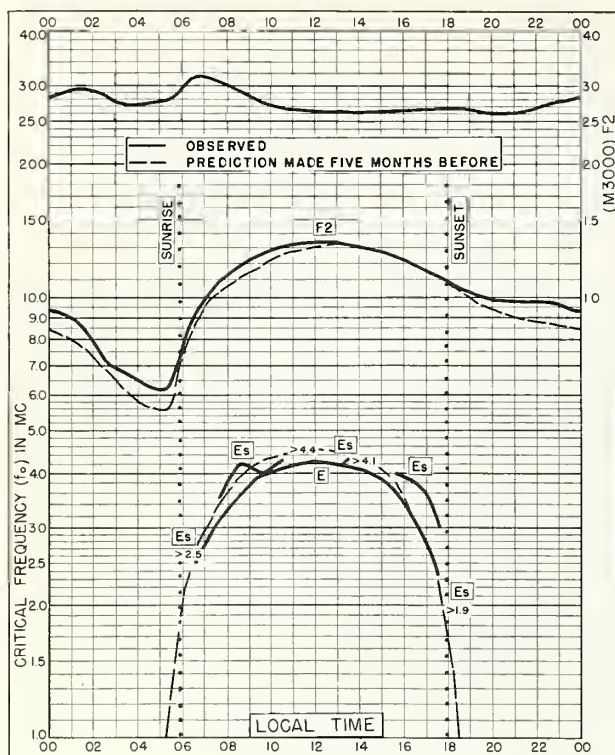


Fig. 21. PUERTO RICO, W. I.  
18.5°N, 67.2°W

SEPTEMBER 1958

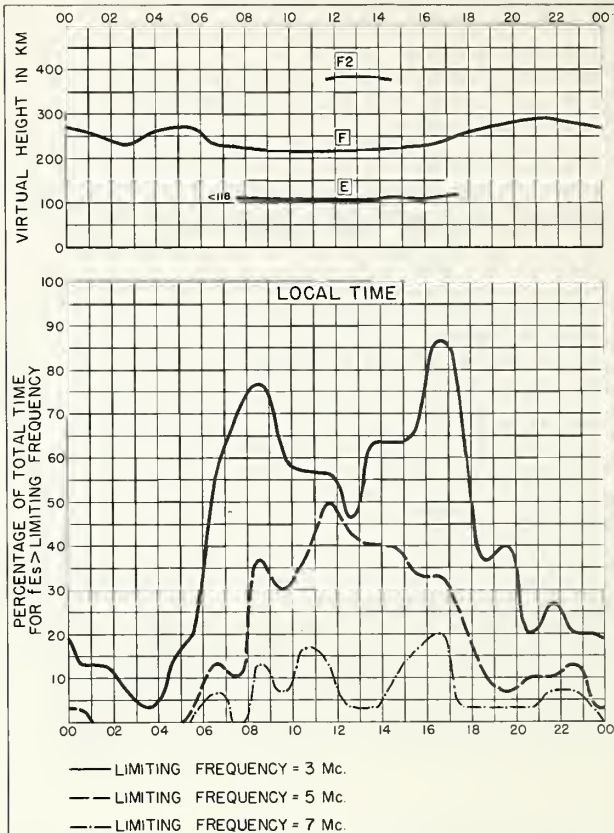


Fig. 22. PUERTO RICO, W. I.

SEPTEMBER 1958

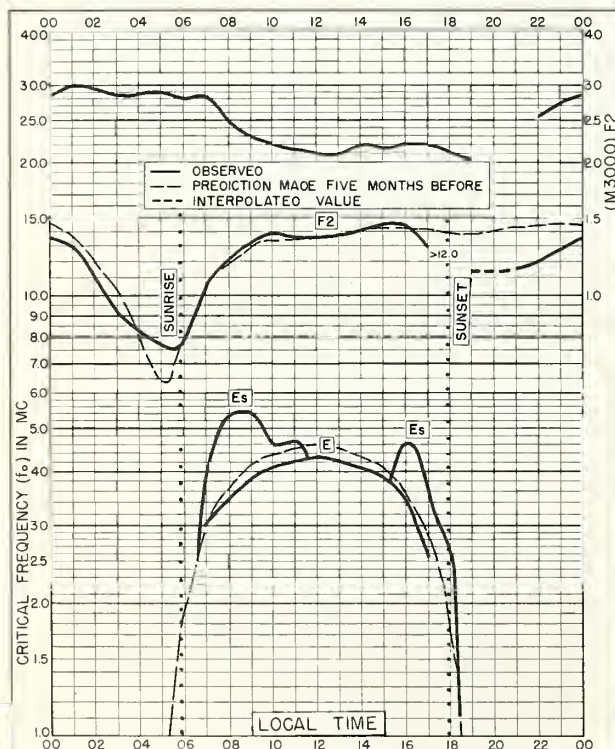


Fig. 23. BAGUIO, P. I.  
16.4°N, 120.6°E

SEPTEMBER 1958

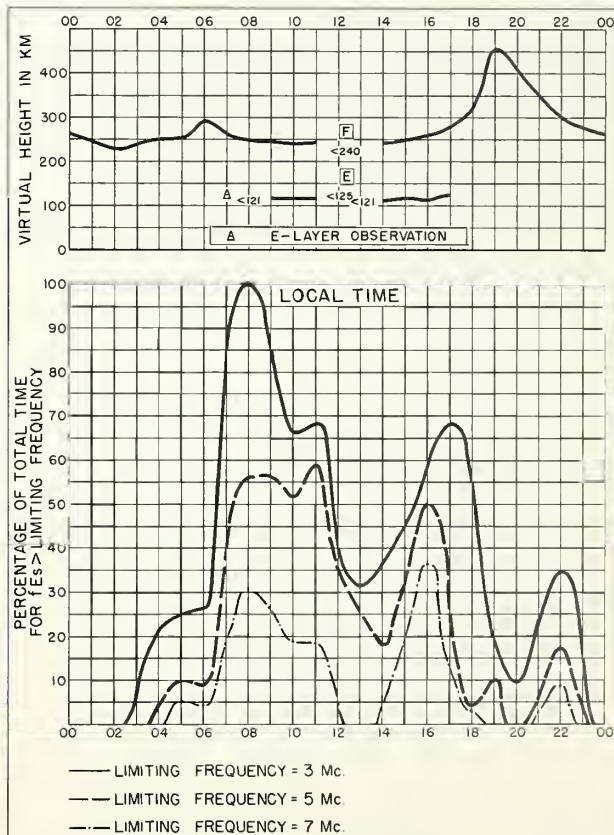


Fig. 24. BAGUIO, P. I.

SEPTEMBER 1958



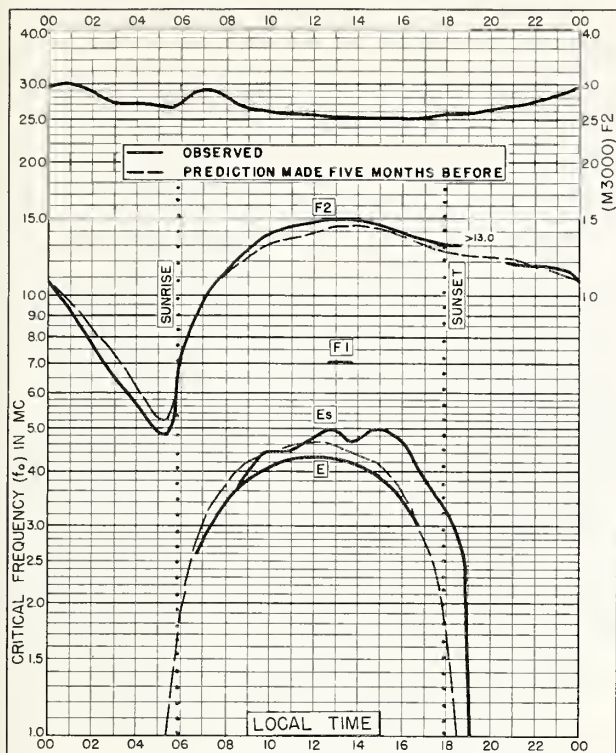


Fig. 25. PANAMA CANAL ZONE  
9.4°N, 79.9°W SEPTEMBER 1958

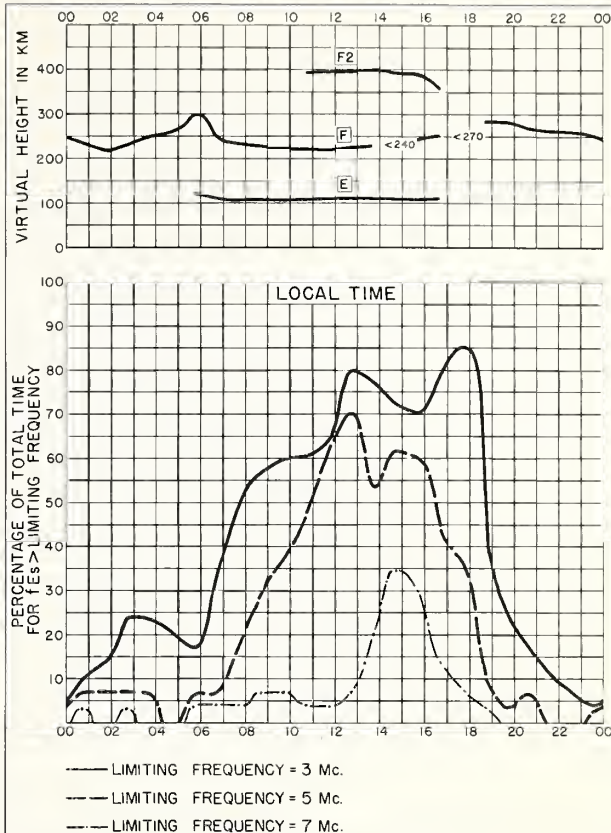


Fig. 26. PANAMA CANAL ZONE SEPTEMBER 1958

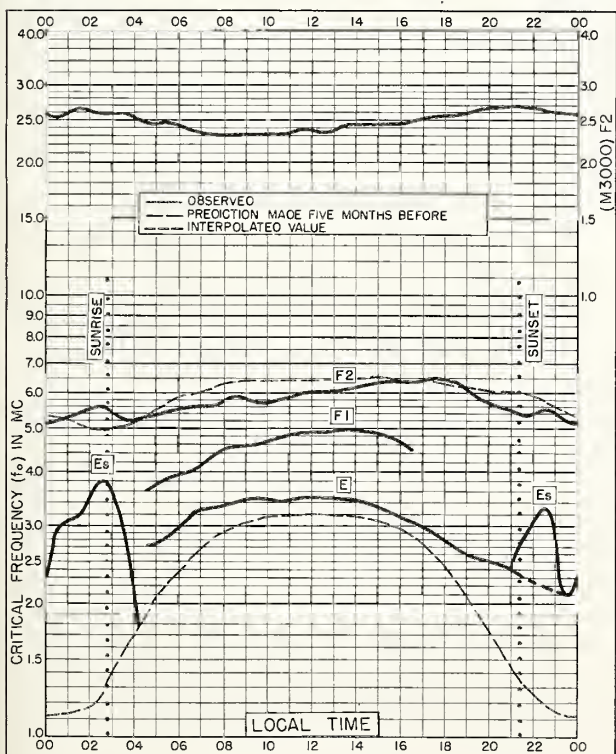


Fig. 27. POINT BARROW, ALASKA  
71.3°N, 156.8°W AUGUST 1958

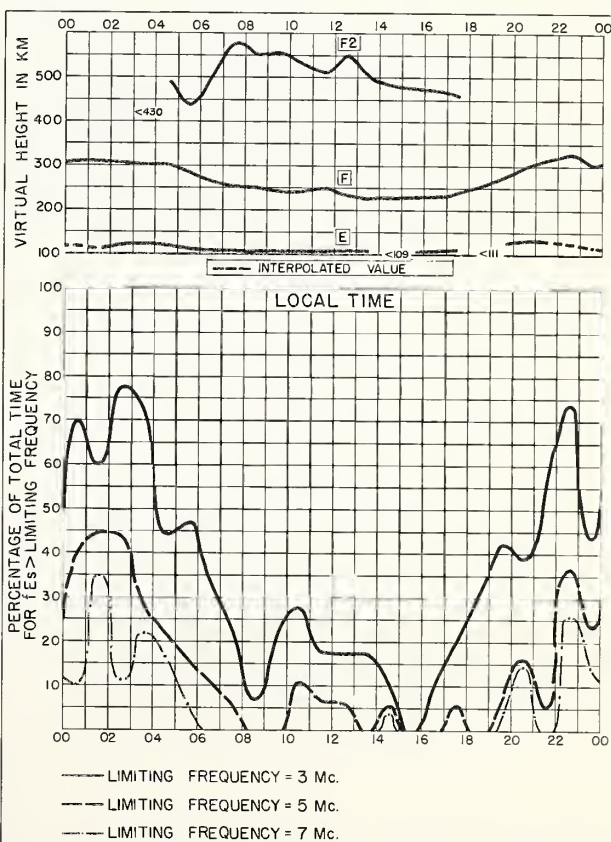


Fig. 28. POINT BARROW, ALASKA AUGUST 1958

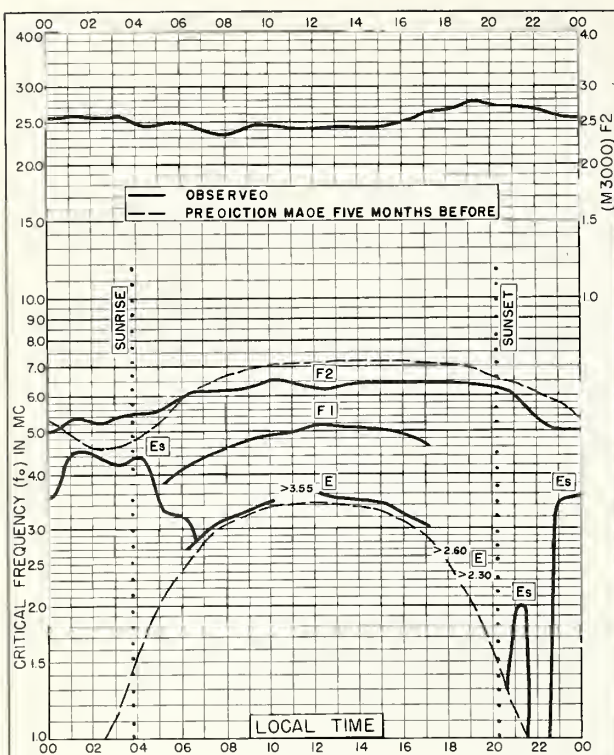


Fig. 29. FAIRBANKS, ALASKA  
64.9°N, 147.8°W

AUGUST 1958

NBS 503

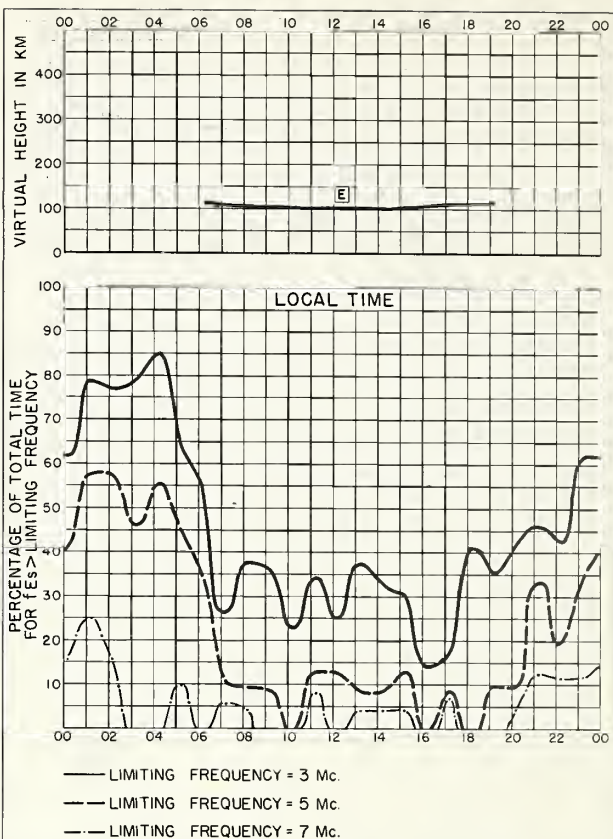


Fig. 30. FAIRBANKS, ALASKA

AUGUST 1958

NBS 490

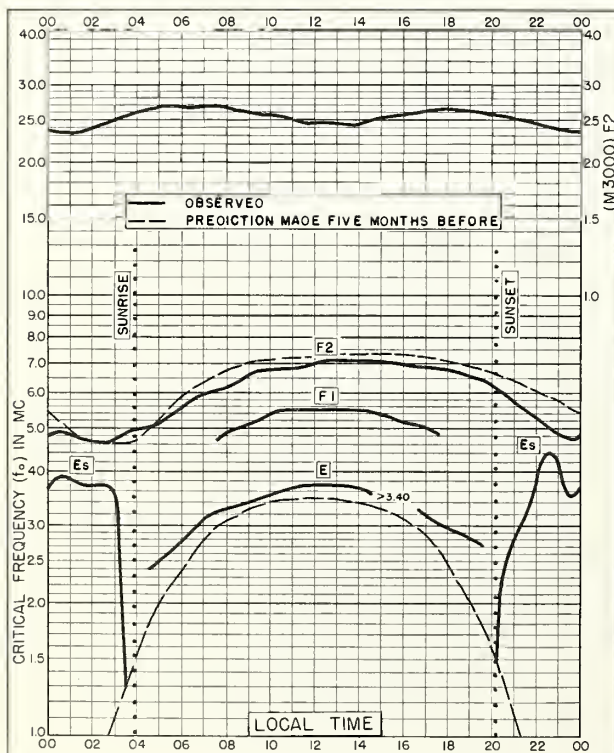


Fig. 31. REYKJAVIK, ICELAND  
64.1°N, 21.8°W

AUGUST 1958

NBS 503

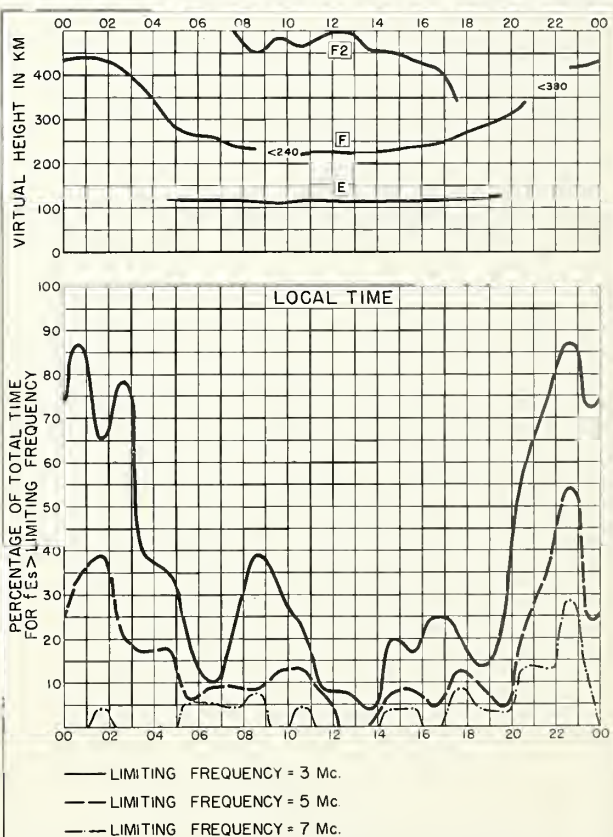


Fig. 32. REYKJAVIK, ICELAND

AUGUST 1958

NBS 490



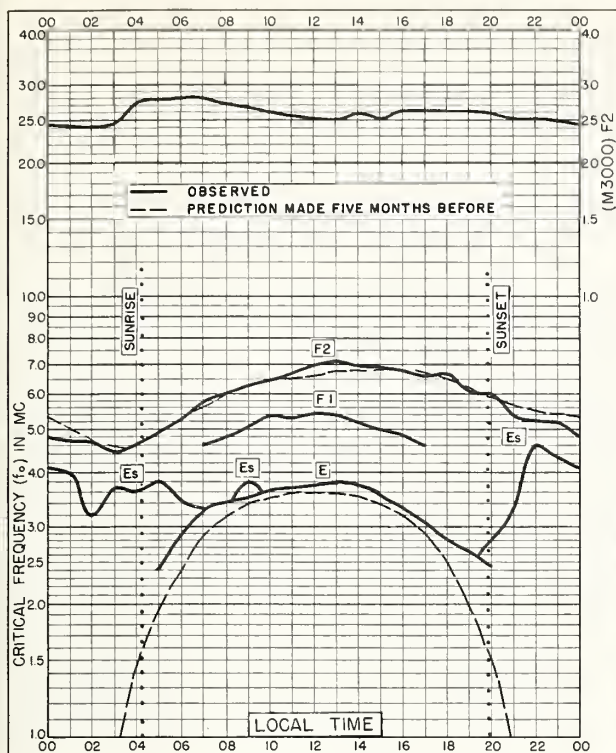


Fig. 33. NARSARSSUAK, GREENLAND  
61.2°N, 45.4°W  
AUGUST 1958

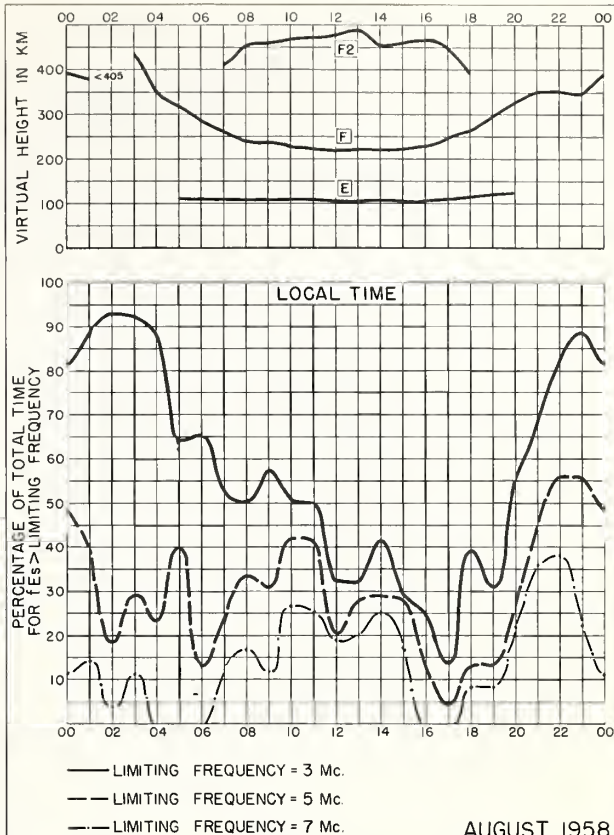


Fig. 34. NARSARSSUAK, GREENLAND

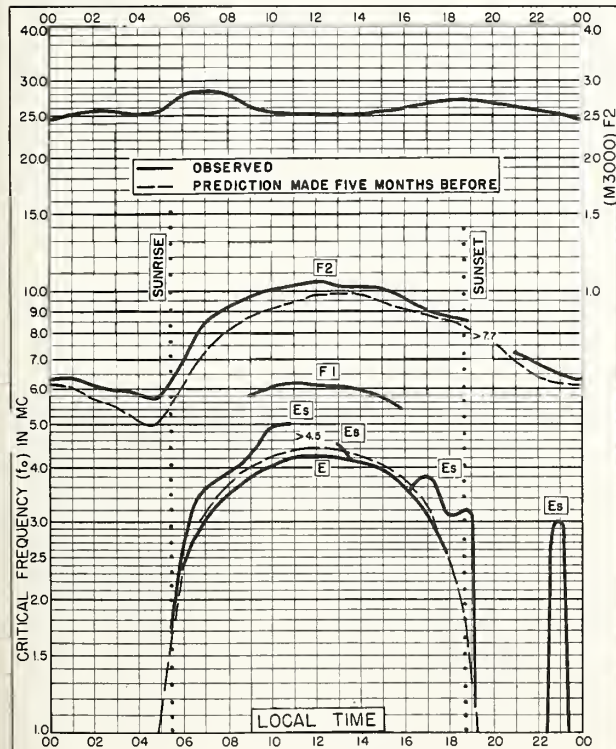


Fig. 35. WHITE SANDS, NEW MEXICO  
32.3°N, 106.5°W  
AUGUST 1958

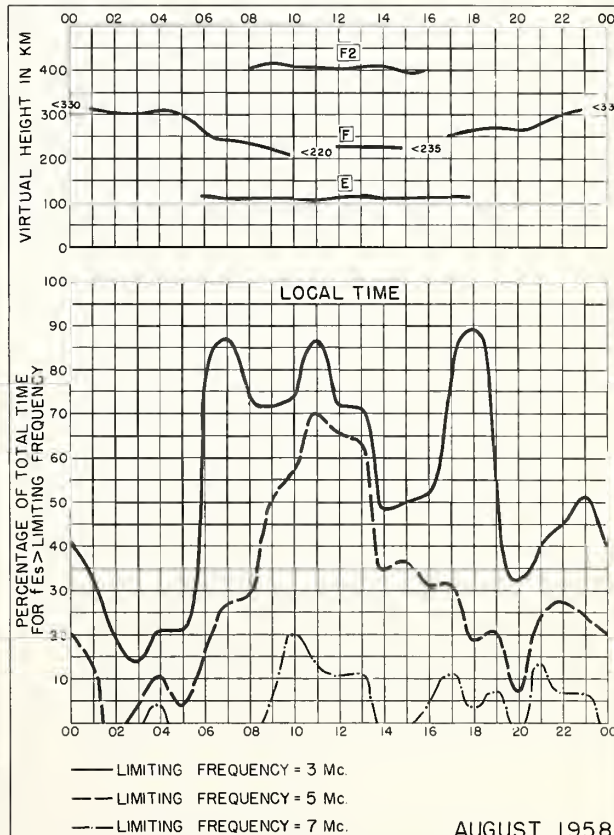


Fig. 36. WHITE SANDS, NEW MEXICO

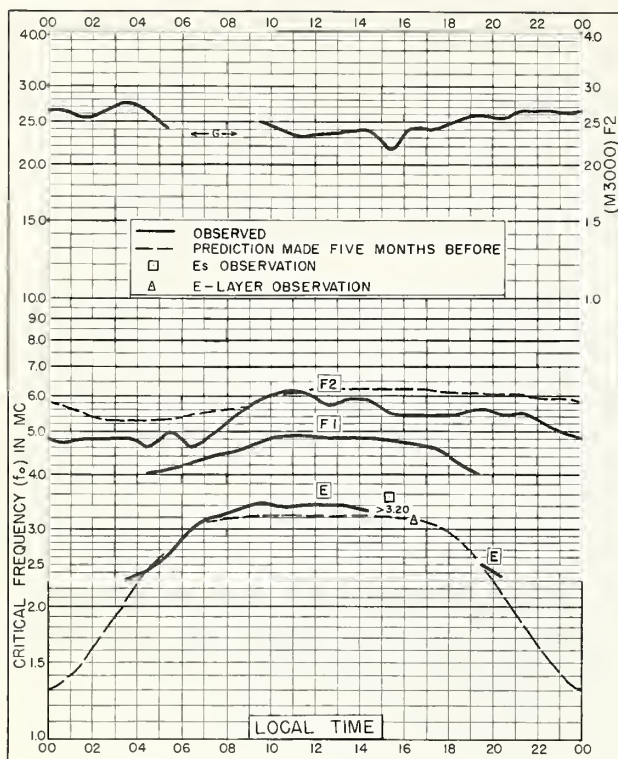


Fig. 37. GODHAVN, GREENLAND  
69.3°N, 53.5°W

JULY 1958

NBS 503

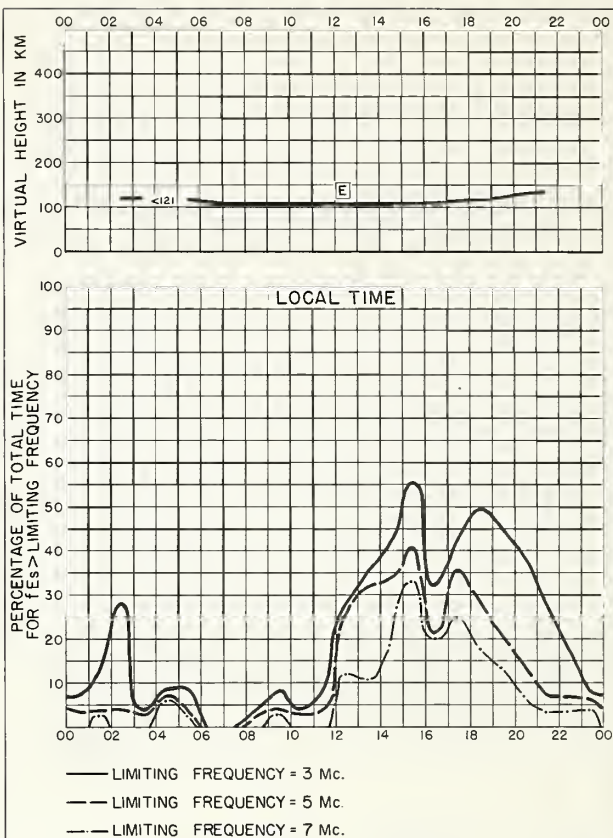


Fig. 38. GODHAVN, GREENLAND

JULY 1958

NBS 490

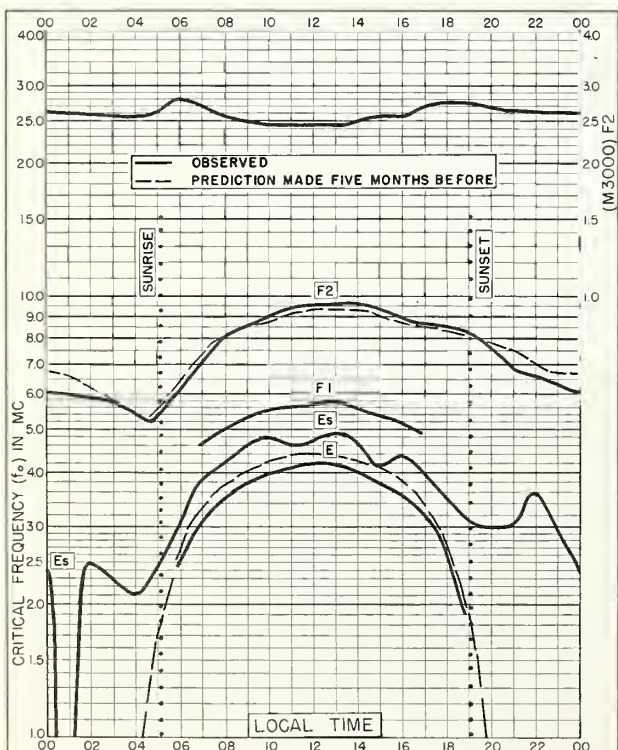


Fig. 39. WHITE SANDS, NEW MEXICO  
32.3°N, 106.5°W

JULY 1958

NBS 503

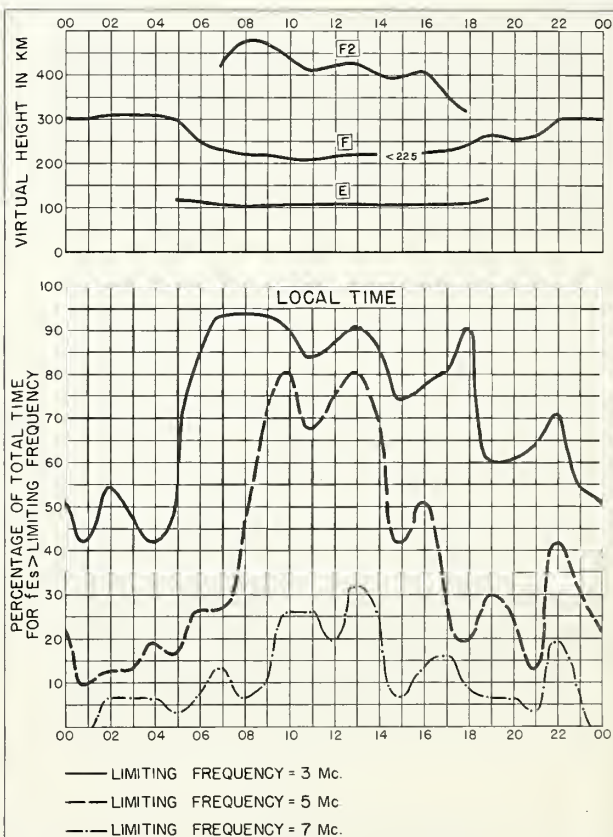


Fig. 40. WHITE SANDS, NEW MEXICO

JULY 1958

NBS 490



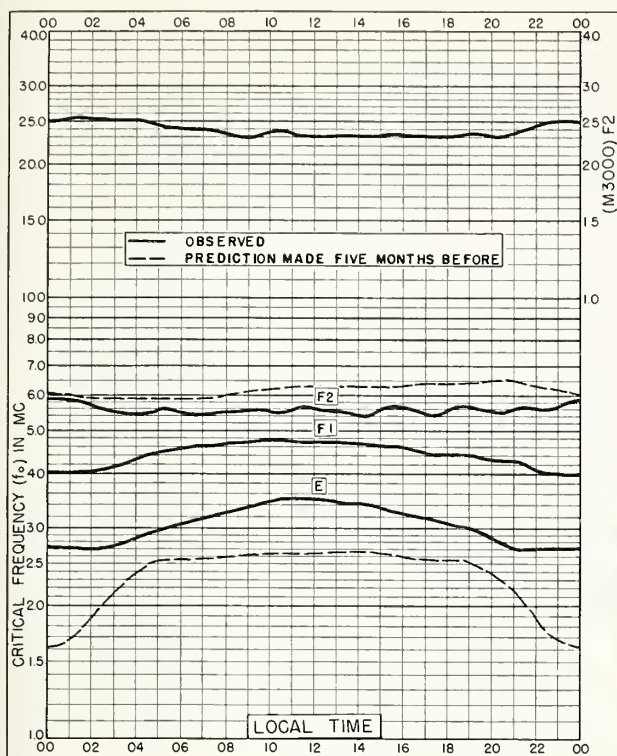


Fig. 41. FLETCHERS ICE I.  
79.9°N, 116.1°W

JUNE 1958

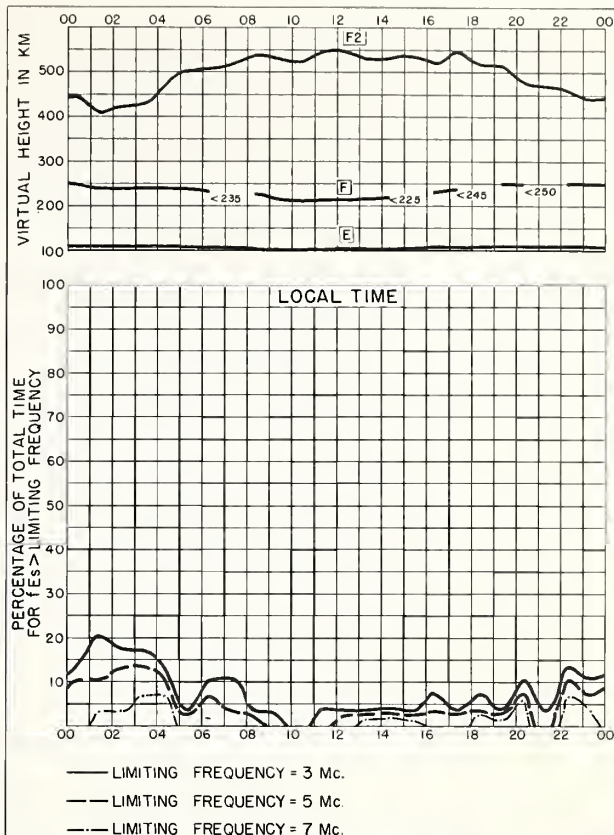


Fig. 42. FLETCHERS ICE I.

JUNE 1958

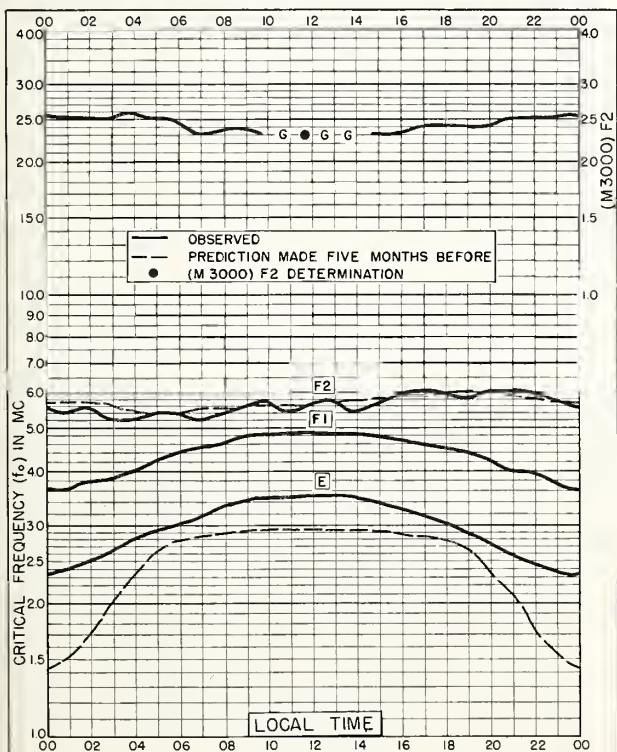


Fig. 43. RESOLUTE BAY, CANADA  
74.7°N, 94.9°W

JUNE 1958

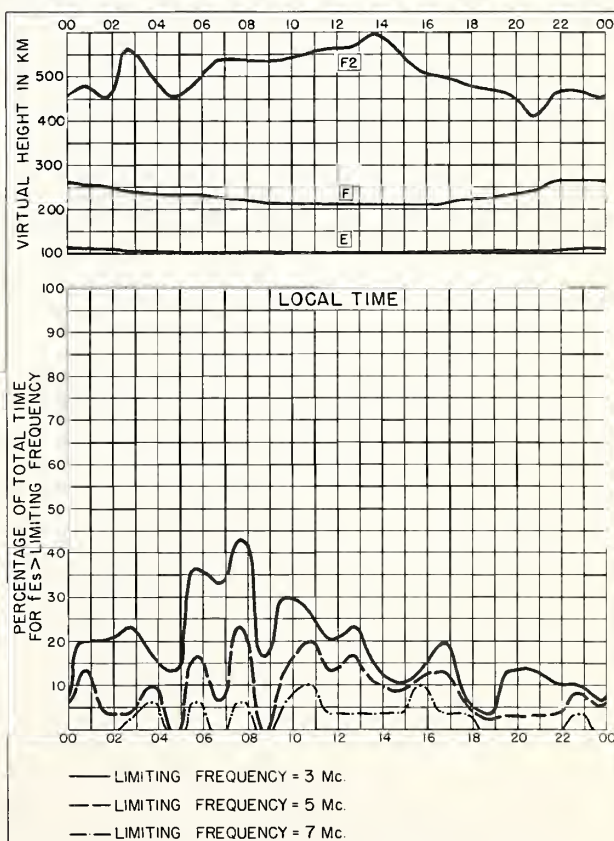


Fig. 44. RESOLUTE BAY, CANADA

JUNE 1958

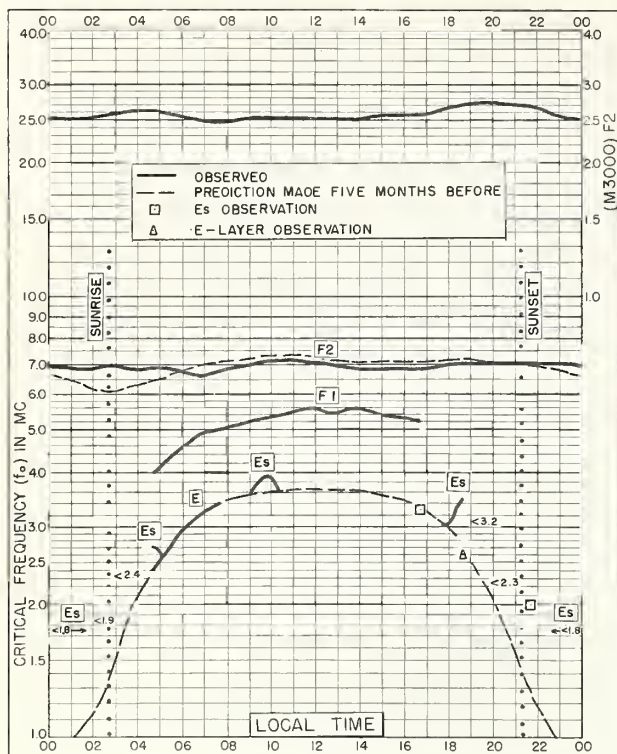


Fig. 45. NURMIJARVI, FINLAND  
60.5°N, 24.6°E

JUNE 1958

NBS 503

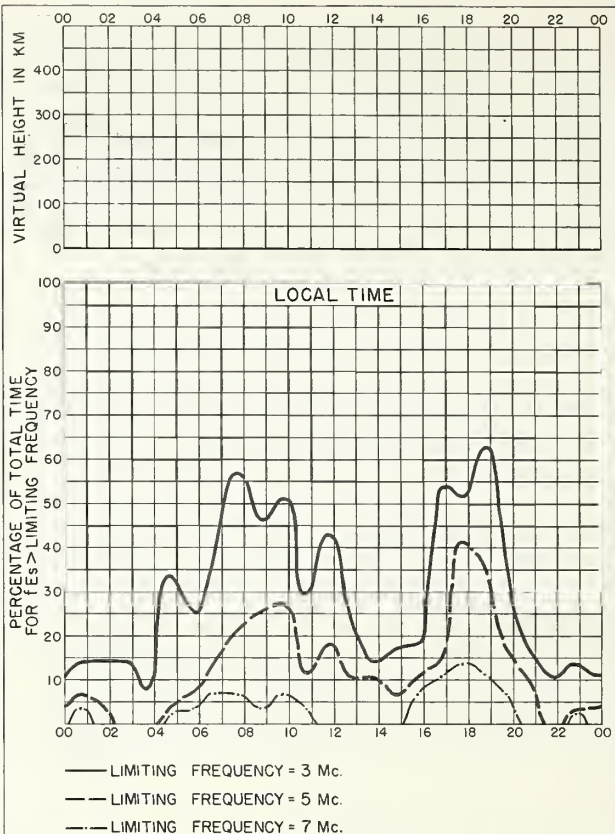


Fig. 46. NURMIJARVI, FINLAND

JUNE 1958

NBS 490

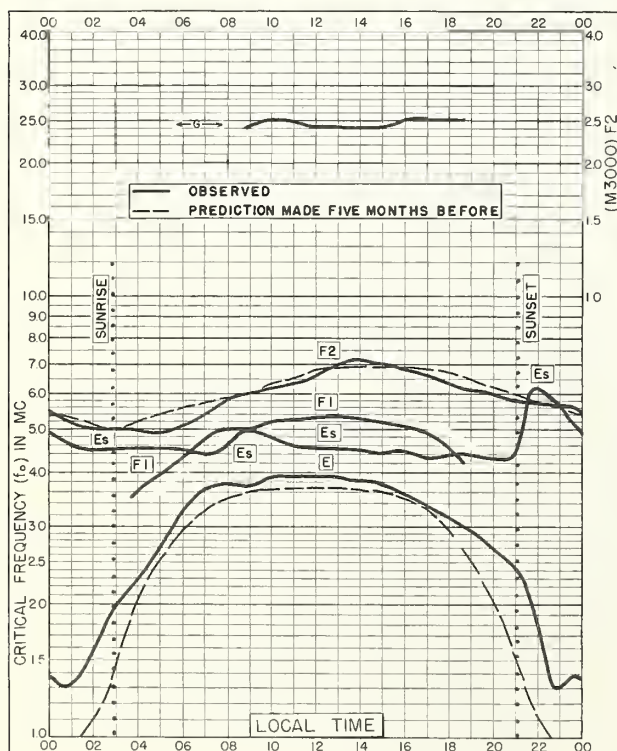


Fig. 47. CHURCHILL, CANADA  
58.8°N, 94.2°W

JUNE 1958

NBS 503

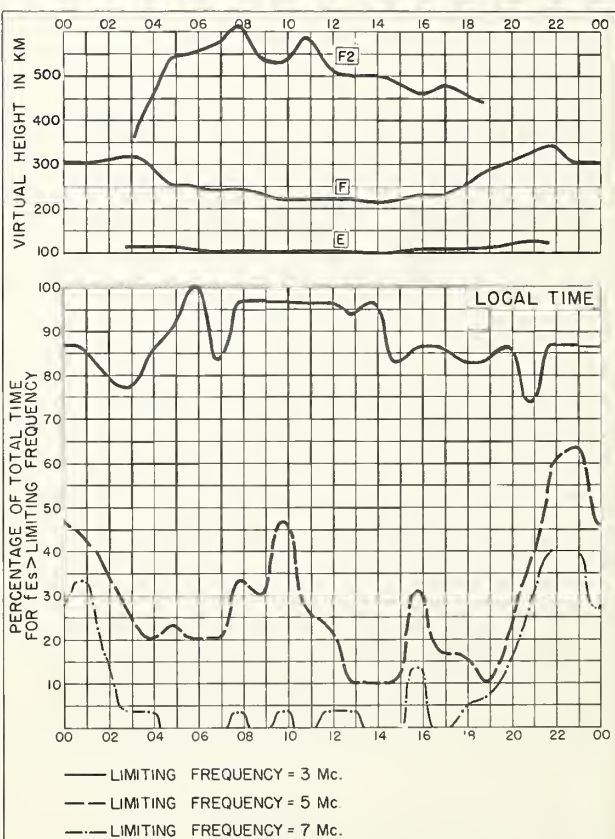


Fig. 48. CHURCHILL, CANADA

JUNE 1958

NBS 490



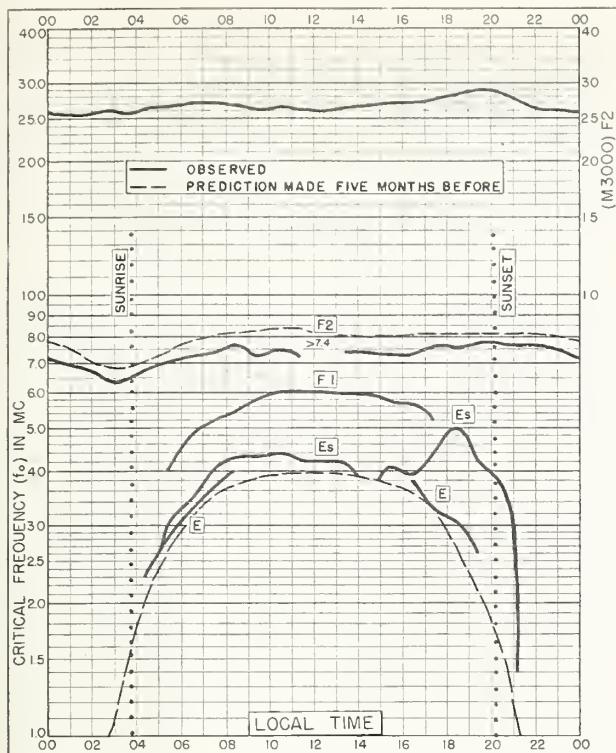


Fig. 49. De BILT, HOLLAND  
52.1°N, 5.2°E

JUNE 1958

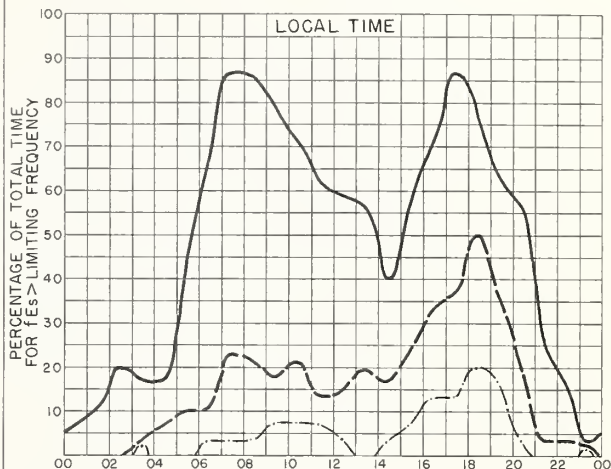
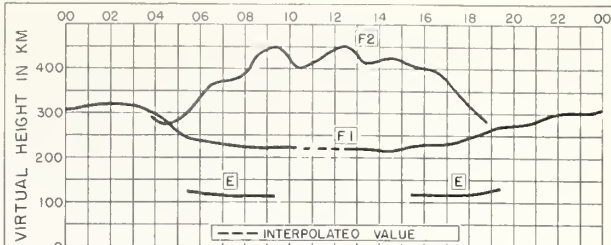


Fig. 50. De BILT, HOLLAND

JUNE 1958

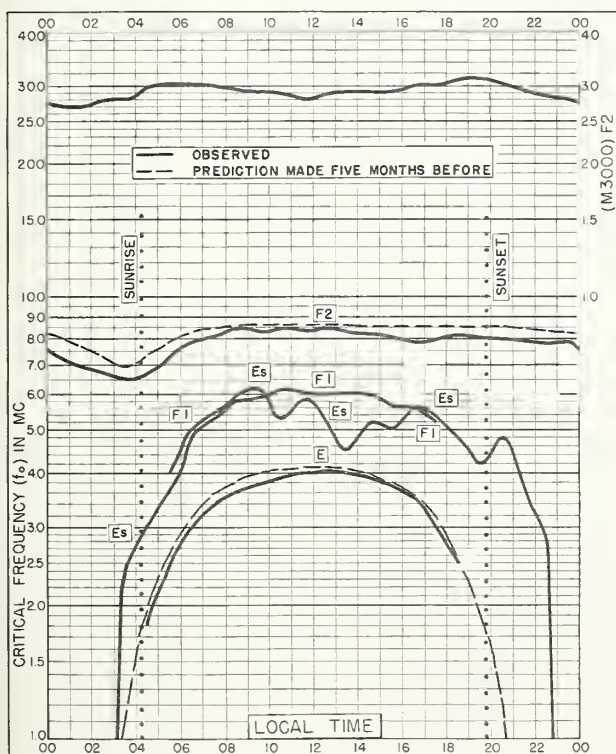


Fig. 51. SCHWARZENBURG, SWITZERLAND  
46.8°N, 7.3°E

JUNE 1958

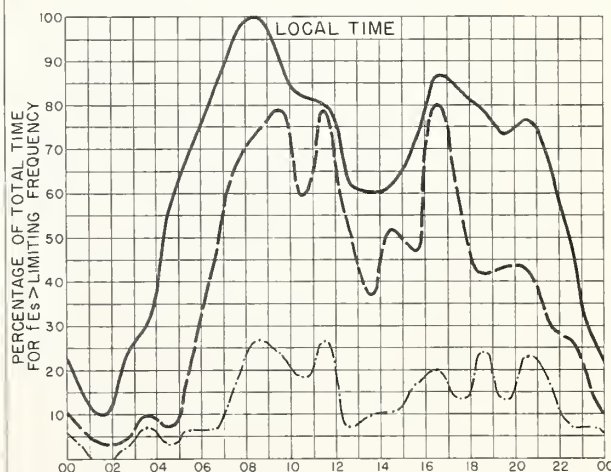
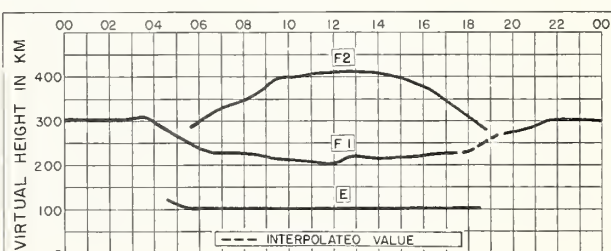


Fig. 52. SCHWARZENBURG, SWITZERLAND

JUNE 1958

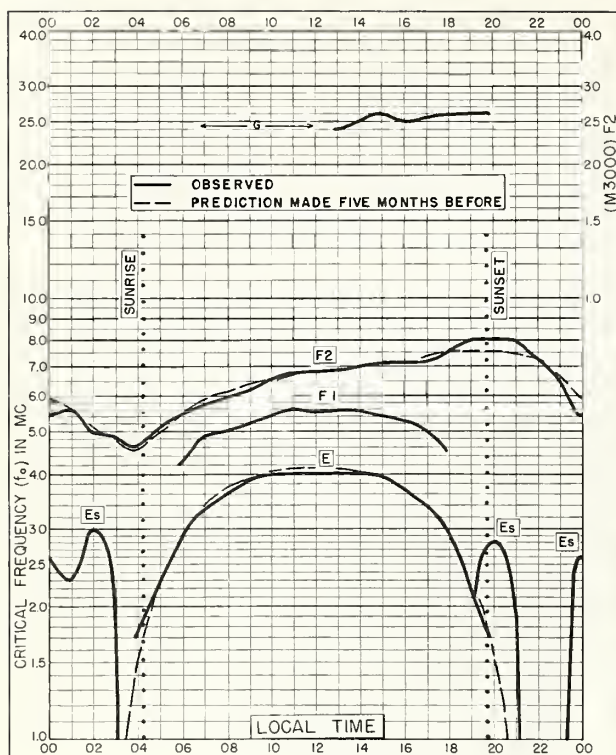


Fig. 53. OTTAWA, CANADA  
45.4°N, 75.9°W

JUNE 1958

NBS 503

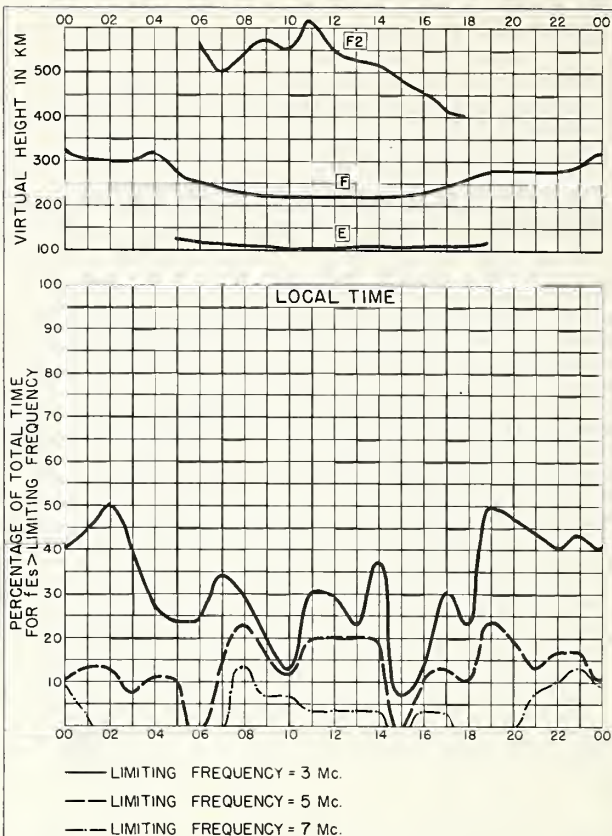


Fig. 54. OTTAWA, CANADA

JUNE 1958

NBS 490

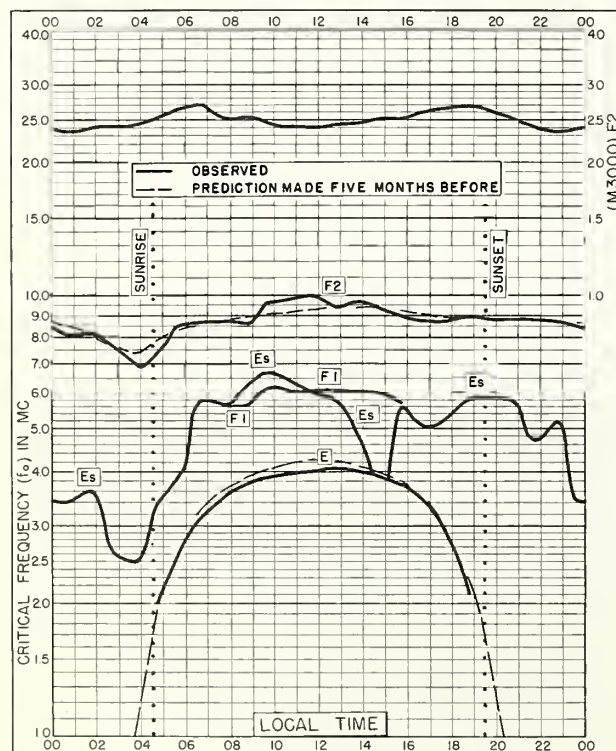


Fig. 55. ROME, ITALY  
41.8°N, 12.5°E

JUNE 1958

NBS 503

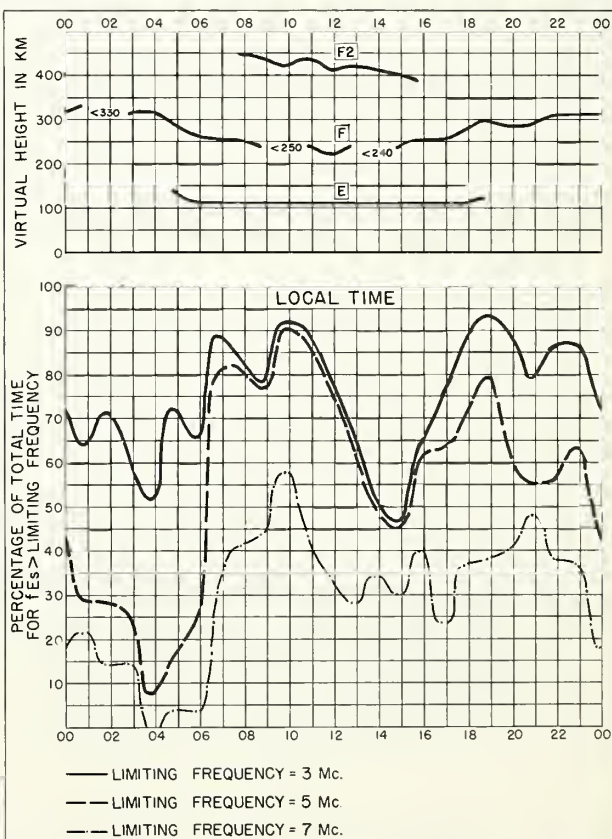


Fig. 56. ROME, ITALY

JUNE 1958

NBS 490



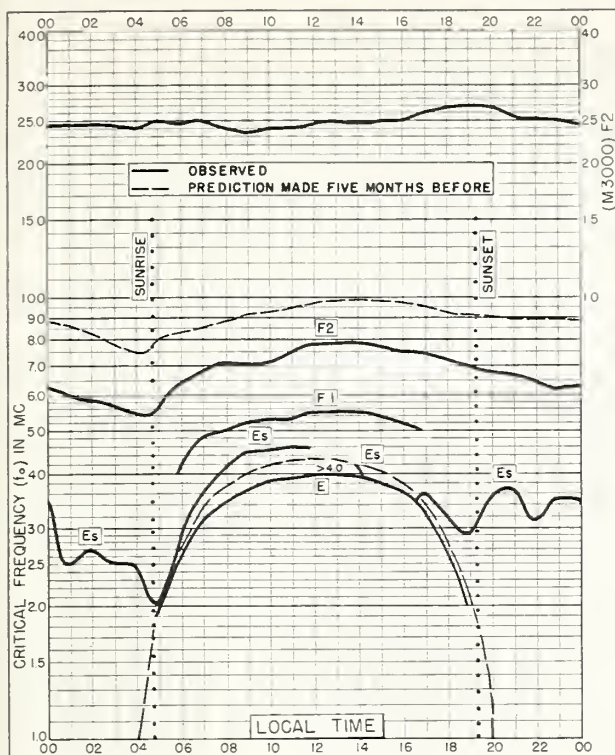


Fig. 57. SAN FRANCISCO, CALIFORNIA  
37.4°N, 122.2°W  
JUNE 1958

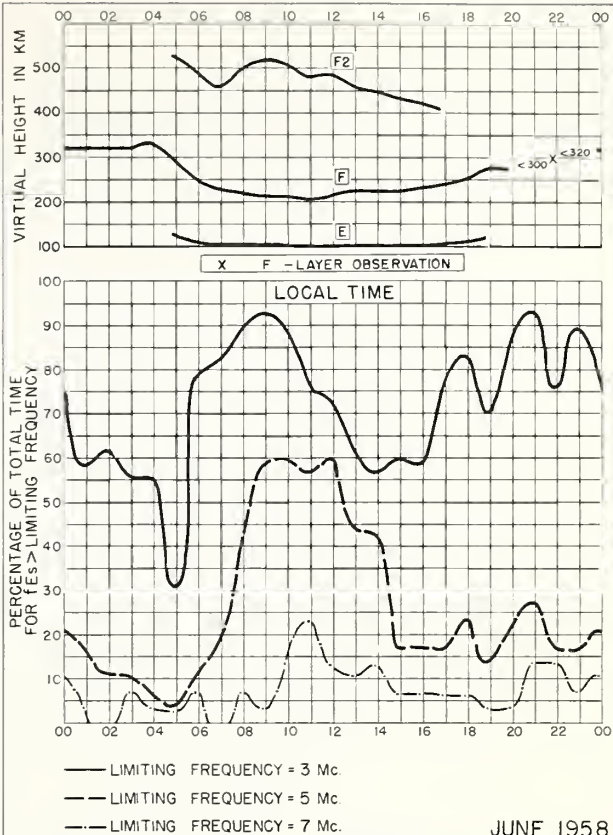


Fig. 58. SAN FRANCISCO, CALIFORNIA

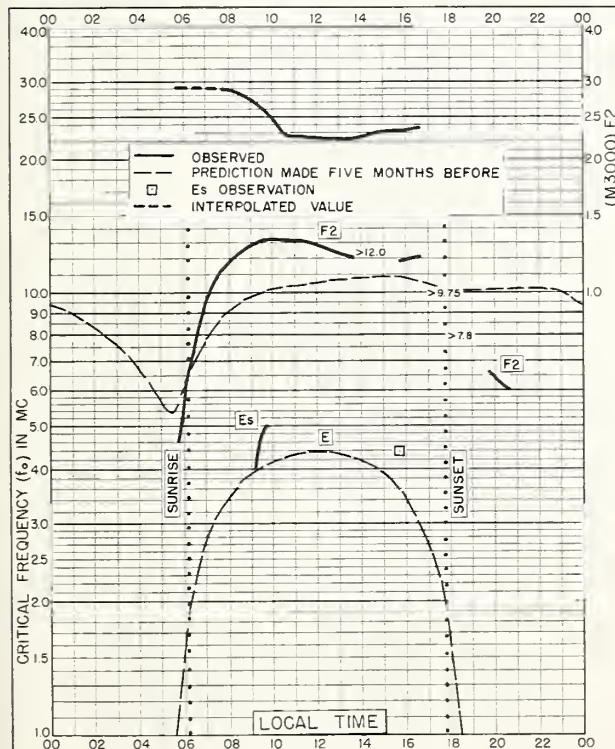


Fig. 59. NATAL, BRAZIL  
5.3°S, 35.1°W  
JUNE 1958

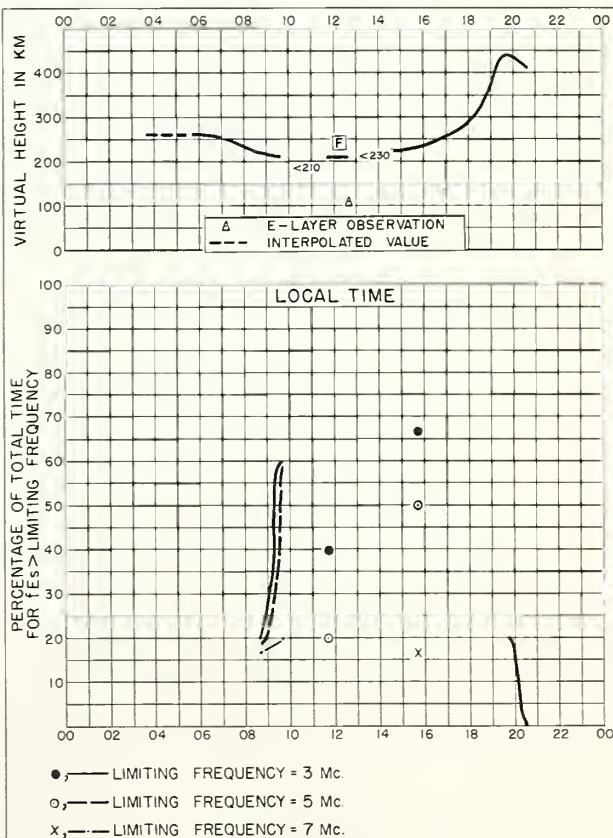


Fig. 60. NATAL, BRAZIL

JUNE 1958

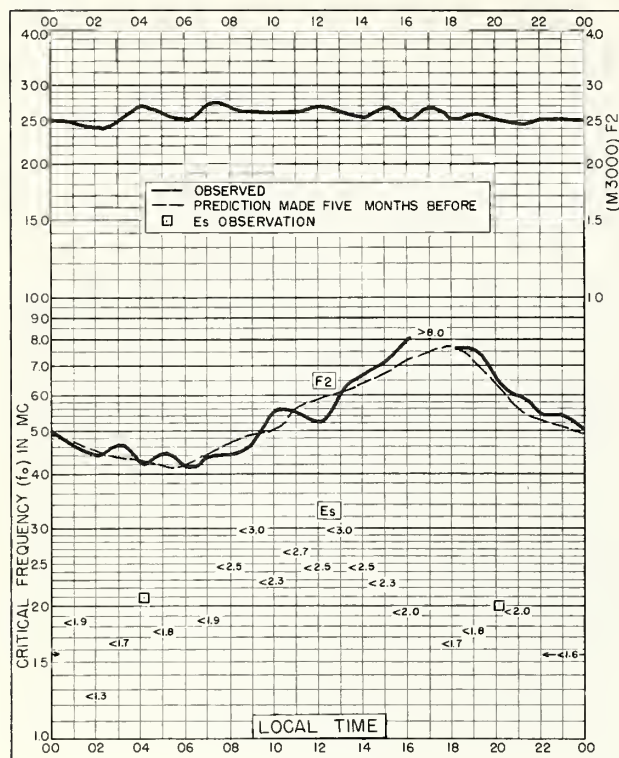


Fig. 61. SCOTT BASE  
77.8°S, 166.8°E

JUNE 1958

NBS 503

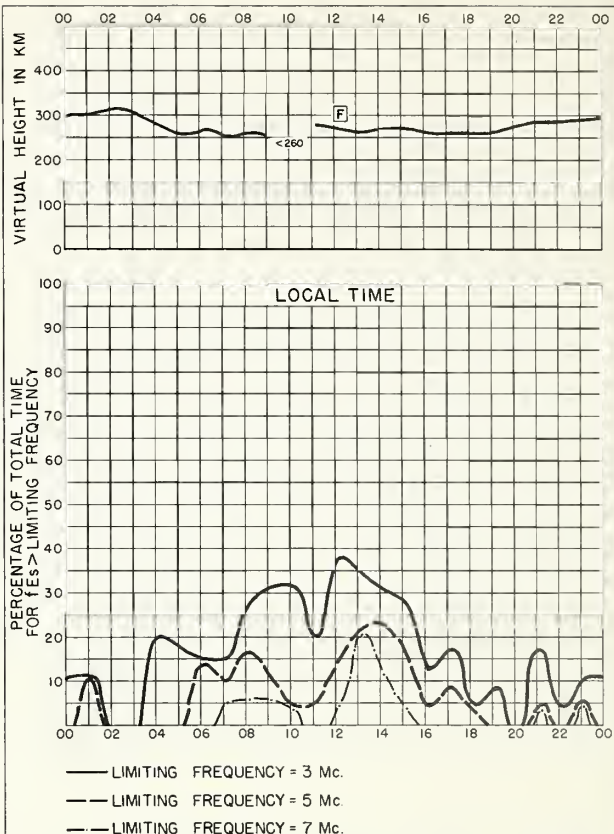


Fig. 62. SCOTT BASE

JUNE 1958

NBS 490

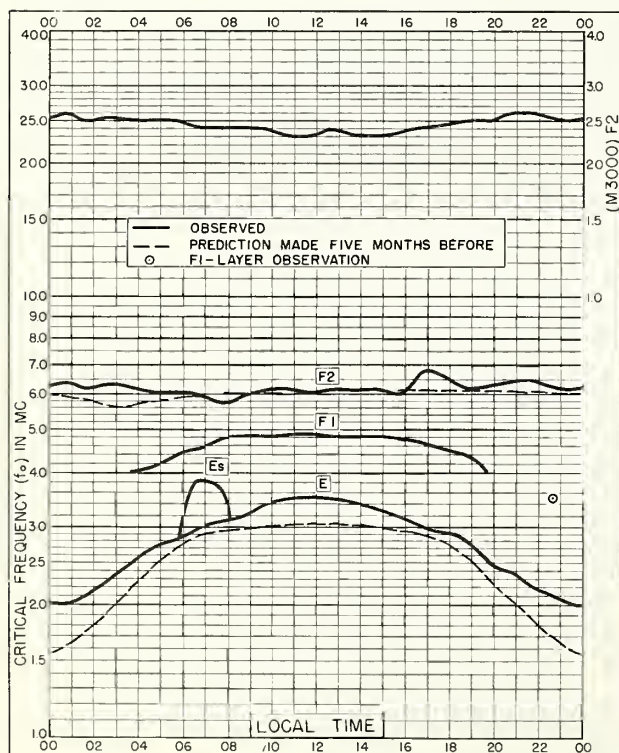


Fig. 63. RESOLUTE BAY, CANADA  
74.7°N, 94.9°W

MAY 1958

NBS 503

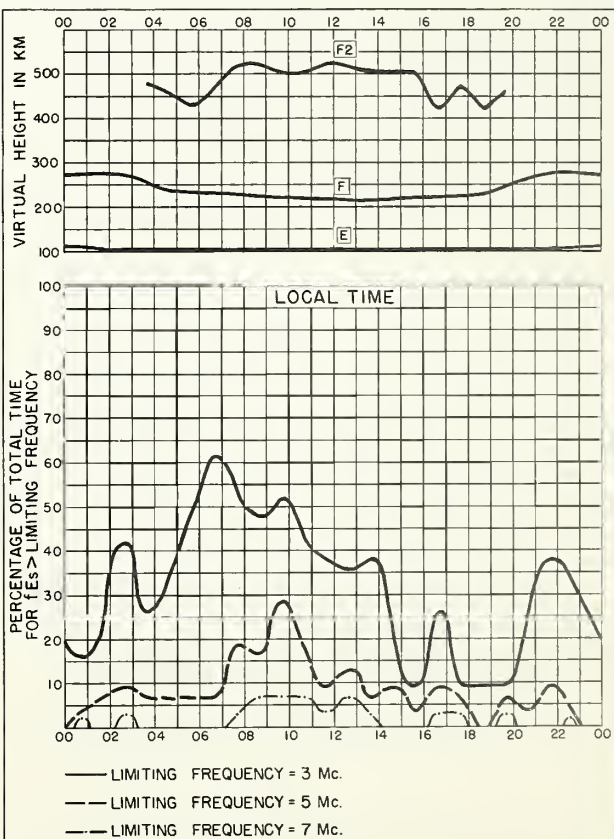


Fig. 64. RESOLUTE BAY, CANADA

MAY 1958

NBS 490



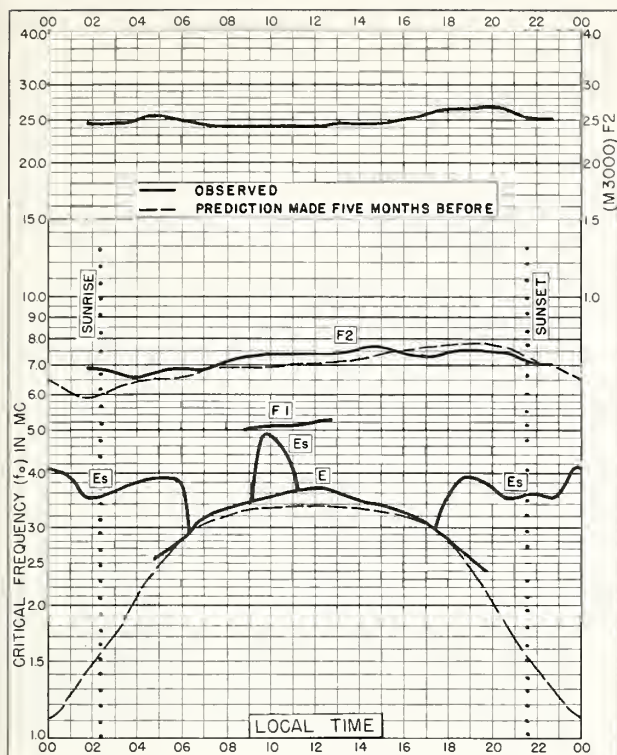


Fig. 65. SODANKYLÄ, FINLAND  
67.4°N, 26.6°E

MAY 1958

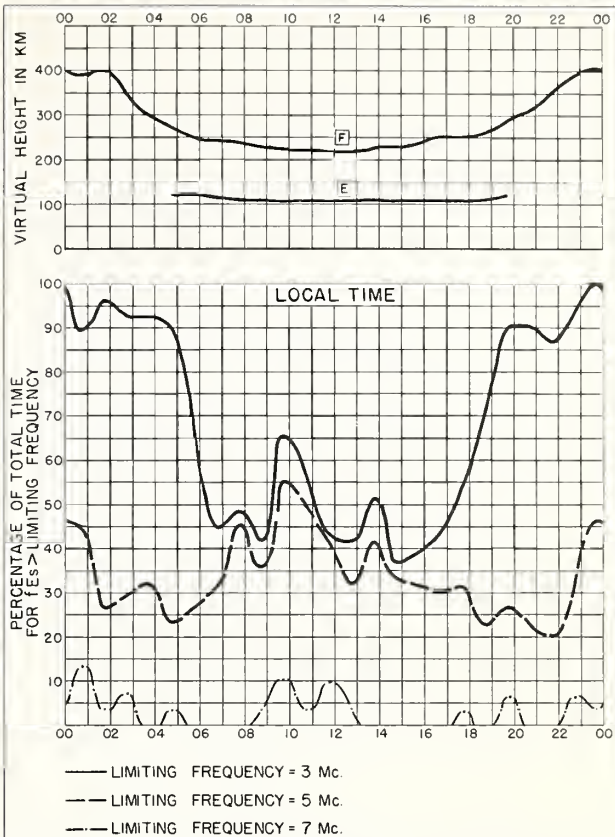


Fig. 66. SODANKYLÄ, FINLAND

MAY 1958

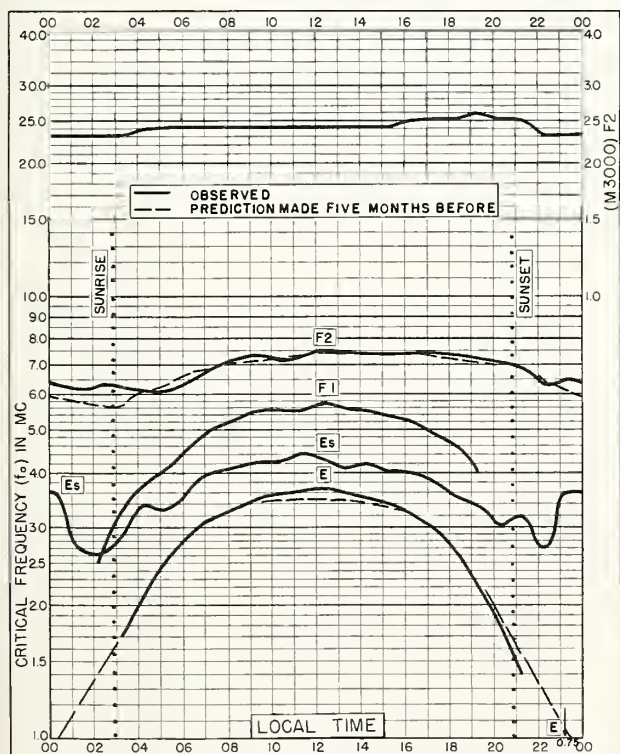


Fig. 67. LYCKSELE, SWEDEN  
64.6°N, 18.8°E

MAY 1958

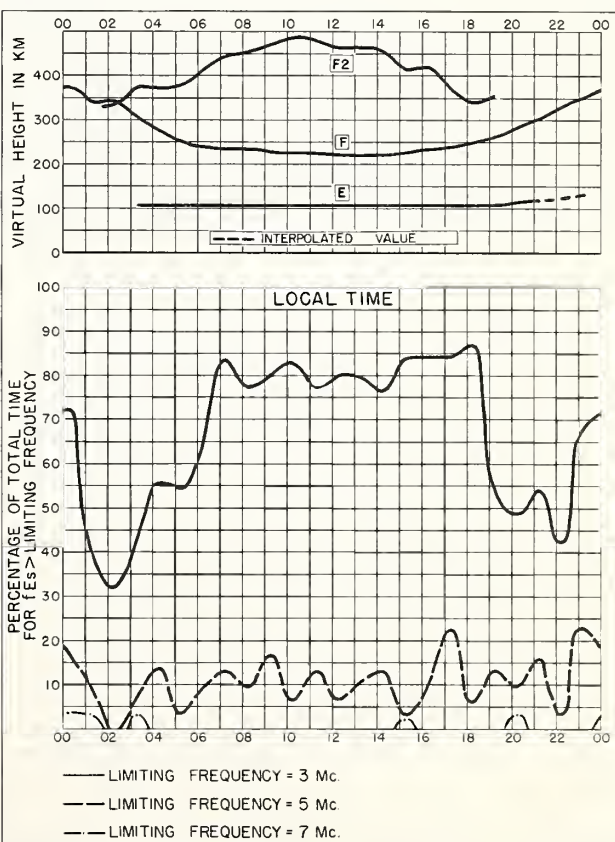


Fig. 68. LYCKSELE, SWEDEN

MAY 1958

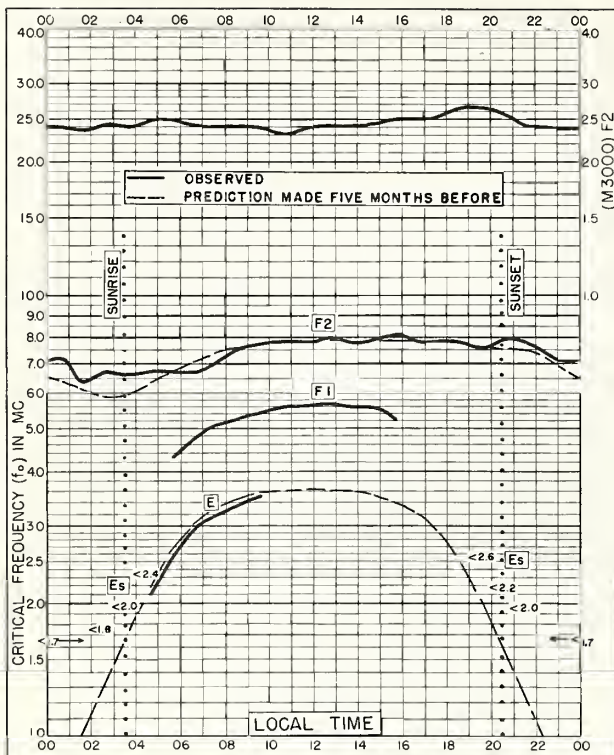


Fig. 69. NURMIJARVI, FINLAND  
60.5°N, 24.6°E

MAY 1958

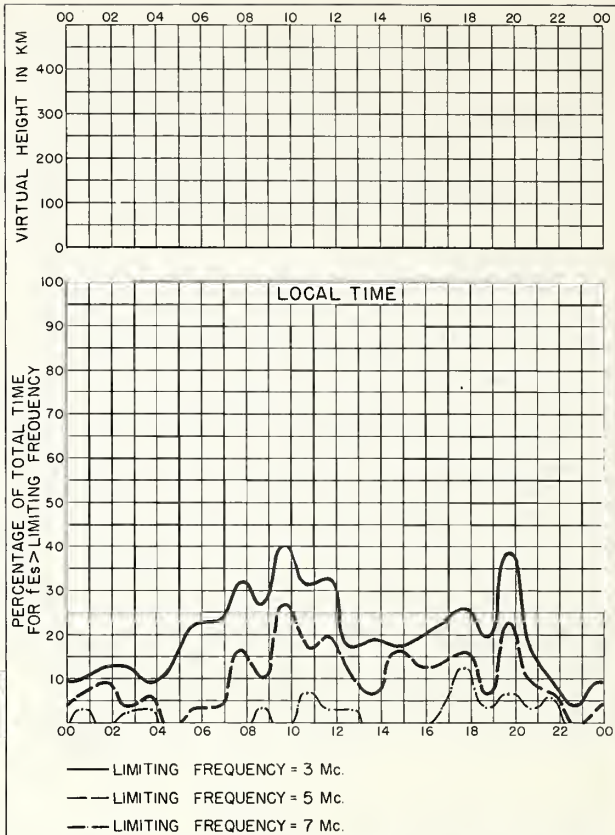


Fig. 70. NURMIJARVI, FINLAND

MAY 1958

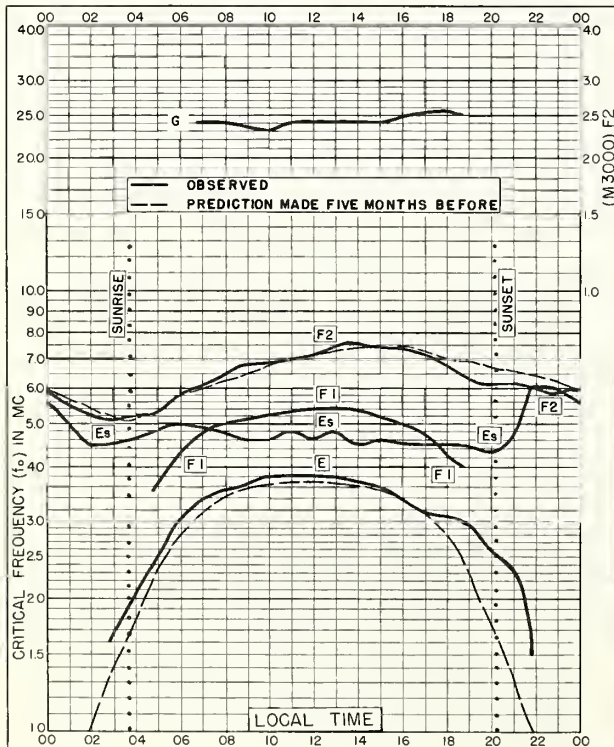


Fig. 71. CHURCHILL, CANADA  
58.8°N, 94.2°W

MAY 1958

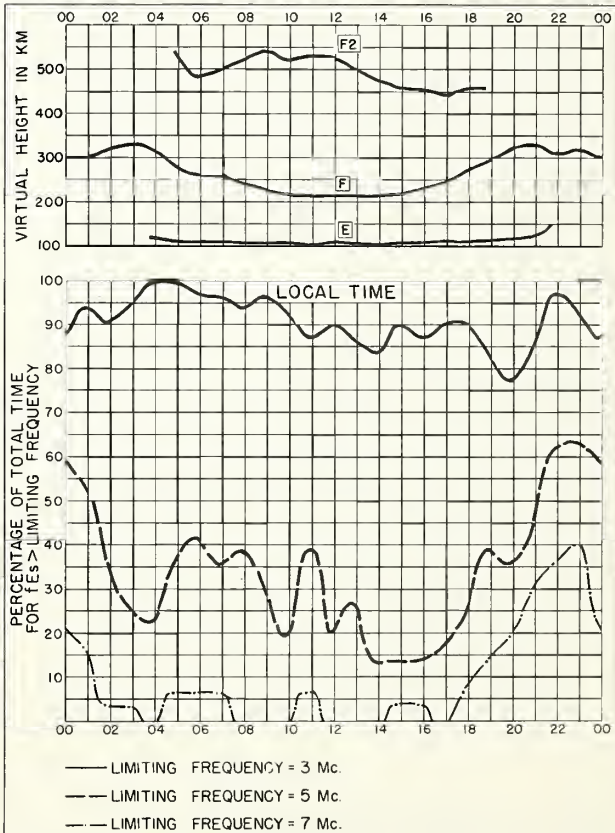


Fig. 72. CHURCHILL, CANADA

MAY 1958



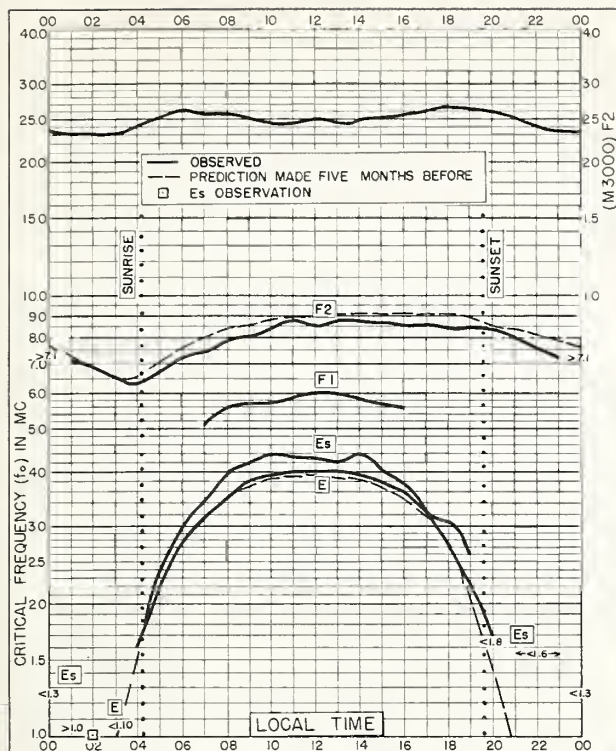


Fig. 73. SLOUGH, ENGLAND  
51.5°N, 0.6°W

MAY 1958

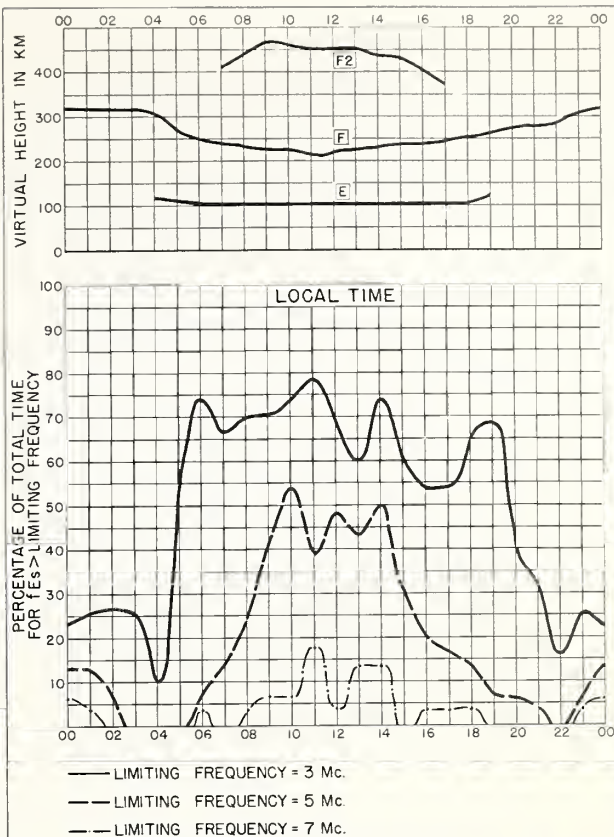


Fig. 74. SLOUGH, ENGLAND

MAY 1958

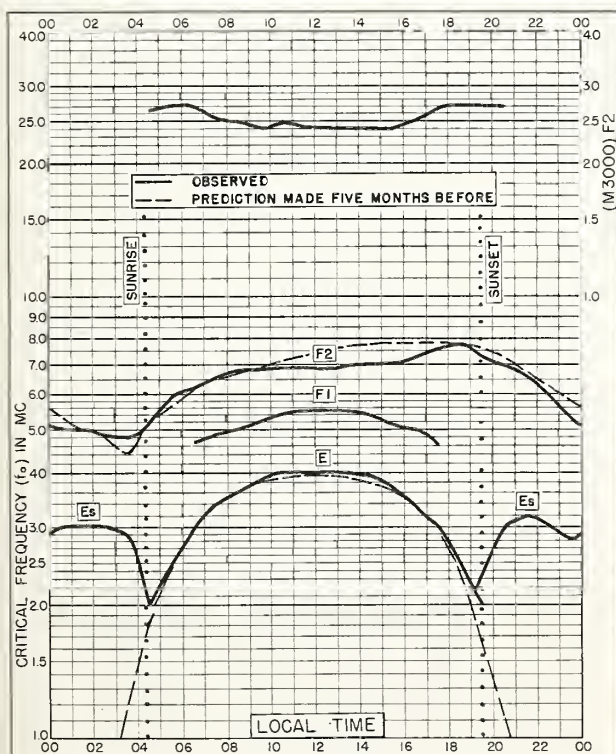


Fig. 75. WINNIPEG, CANADA  
49.9°N, 97.4°W

MAY 1958

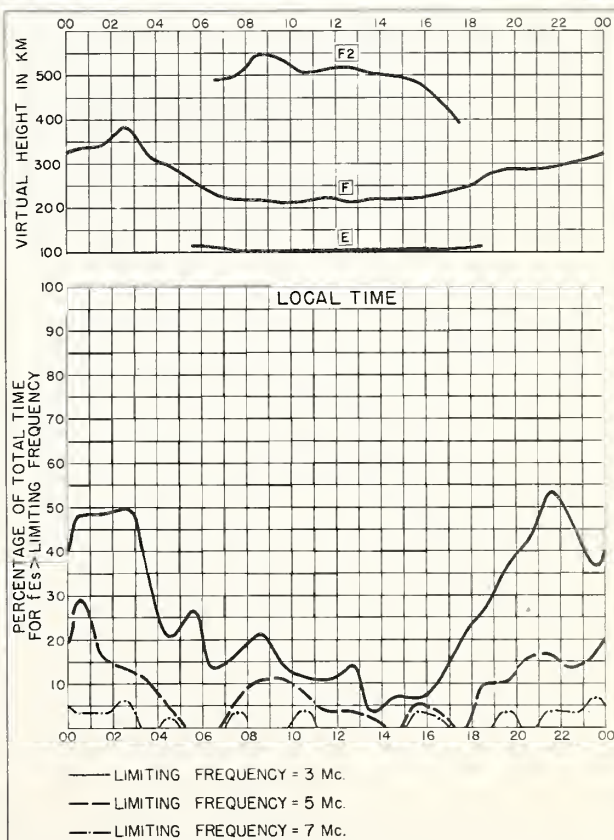


Fig. 76. WINNIPEG, CANADA

MAY 1958

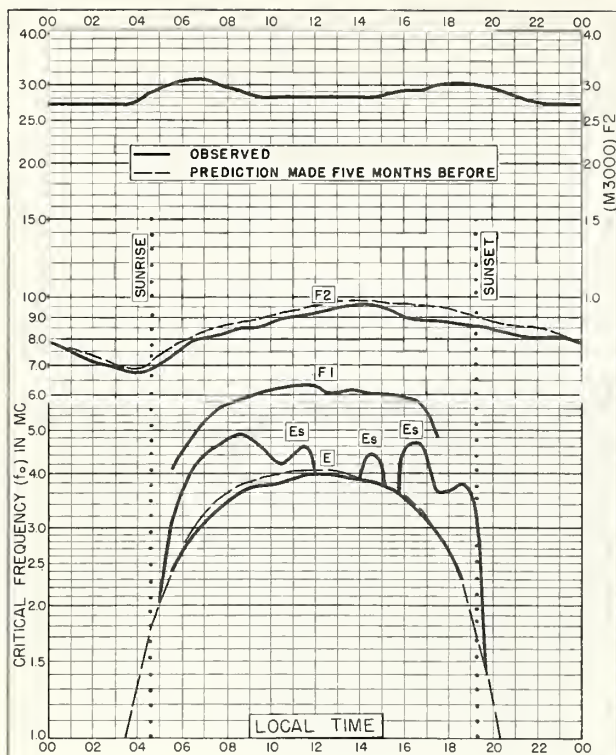


Fig. 77. SCHWARZENBURG, SWITZERLAND  
46.8°N, 7.3°E  
MAY 1958

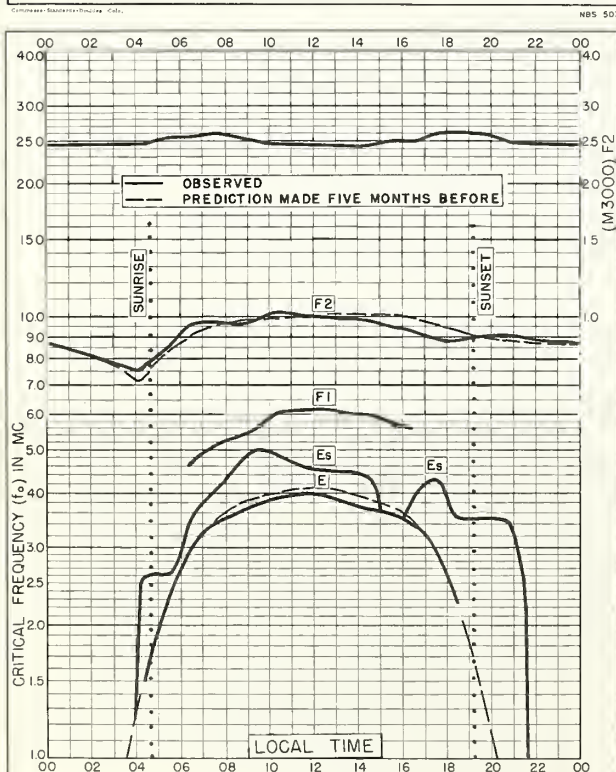


Fig. 79. WAKKANAI, JAPAN  
45.4°N, 141.7°E  
MAY 1958

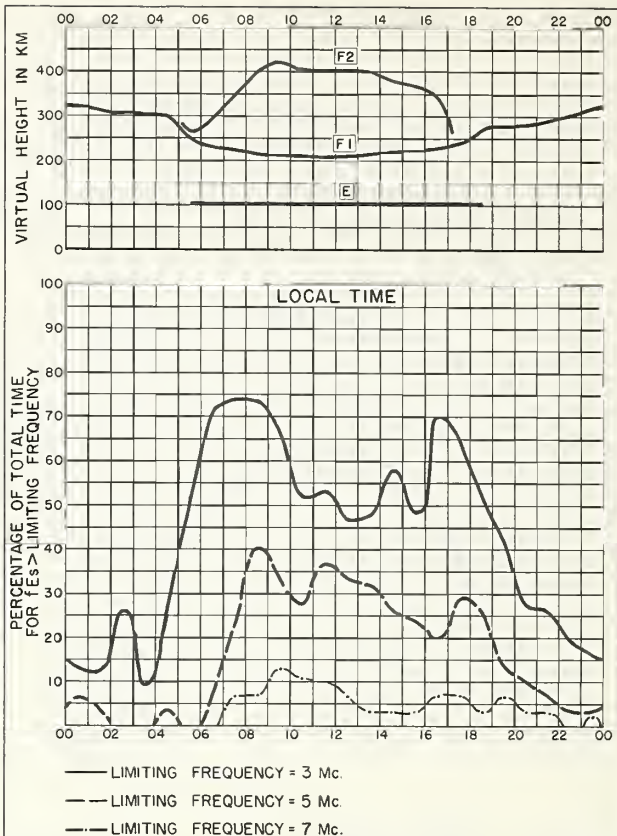


Fig. 78. SCHWARZENBURG, SWITZERLAND MAY 1958

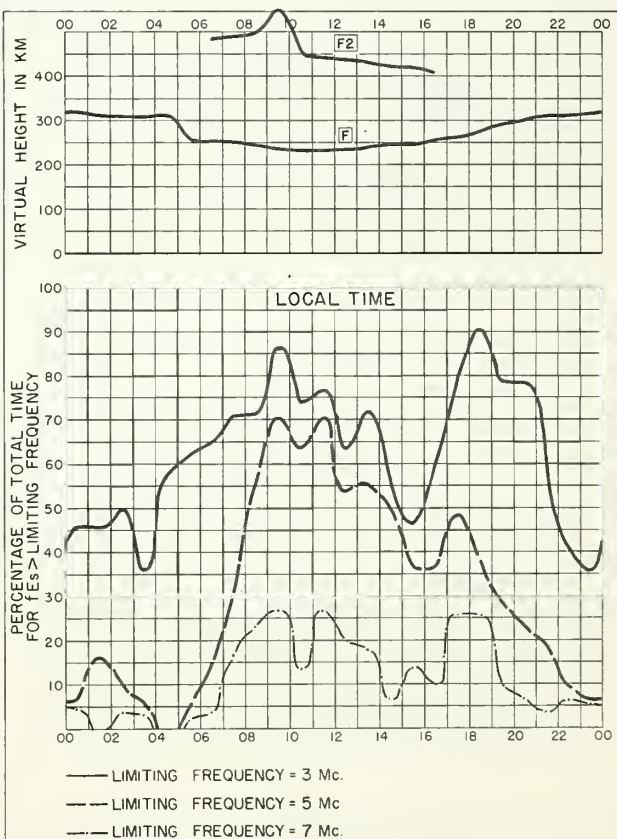


Fig. 80. WAKKANAI, JAPAN  
MAY 1958



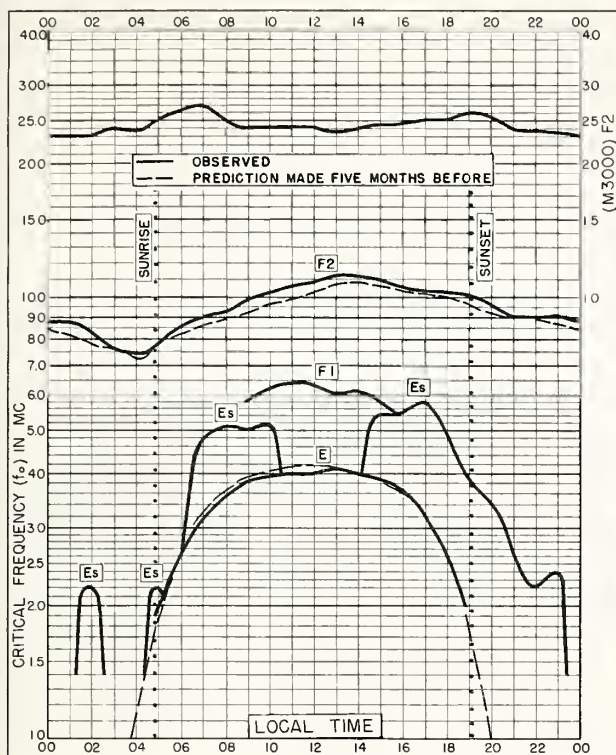


Fig. 81. ROME, ITALY  
41.8°N, 12.5°E

MAY 1958

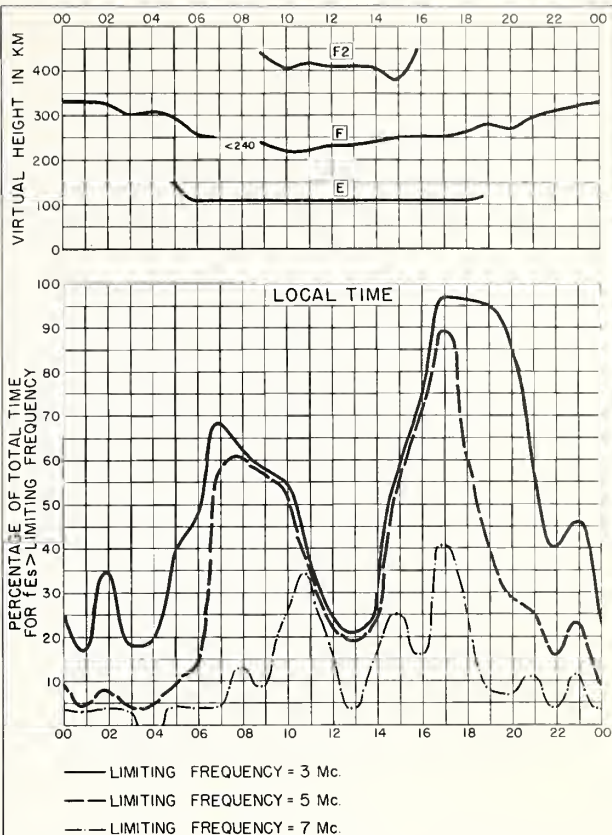


Fig. 82. ROME, ITALY

MAY 1958

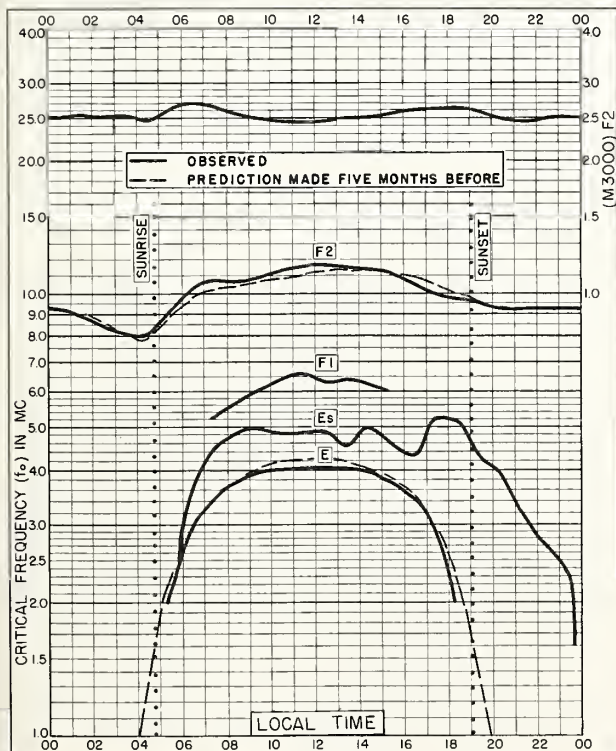


Fig. 83. AKITA, JAPAN  
39.7°N, 140.1°E

MAY 1958

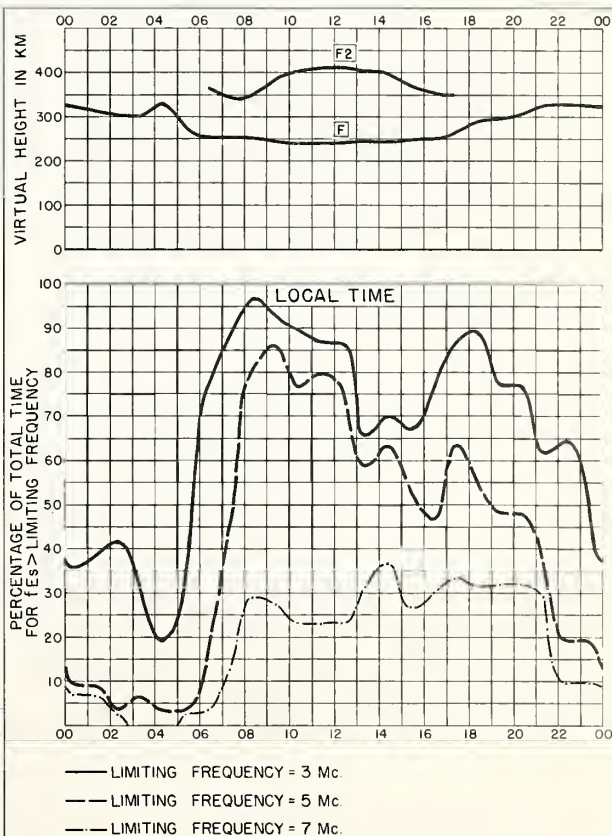


Fig. 84. AKITA, JAPAN

MAY 1958

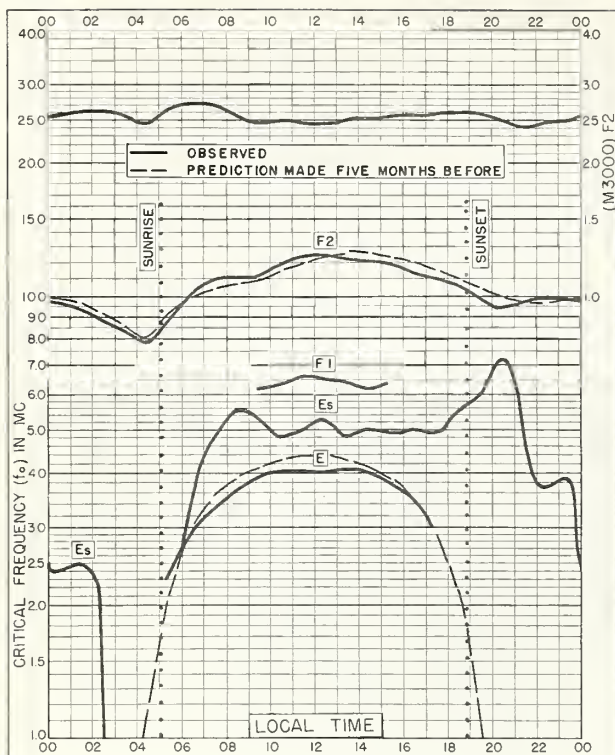


Fig. 85. TOKYO, JAPAN  
35.7°N, 139.5°E

MAY 1958

NBS 503

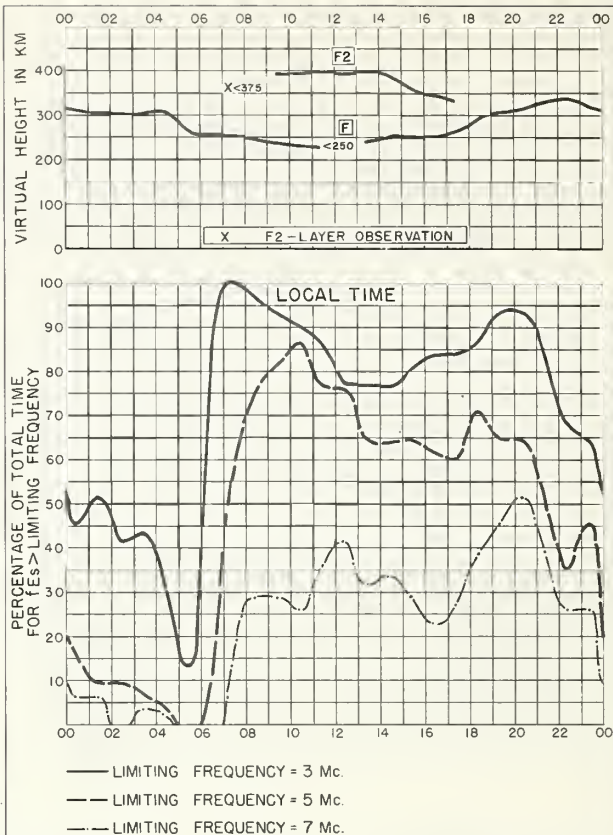


Fig. 86. TOKYO, JAPAN

MAY 1958

NBS 490

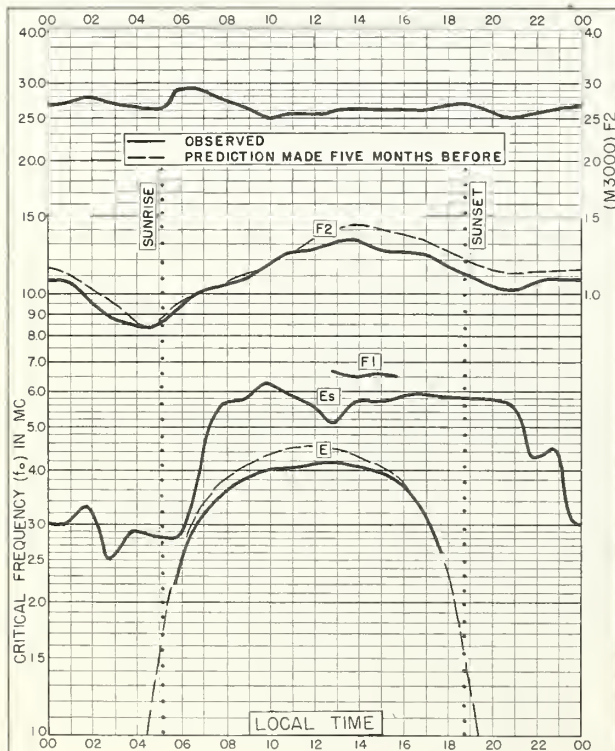


Fig. 87. YAMAGAWA, JAPAN  
31.2°N, 130.6°E

MAY 1958

NBS 503

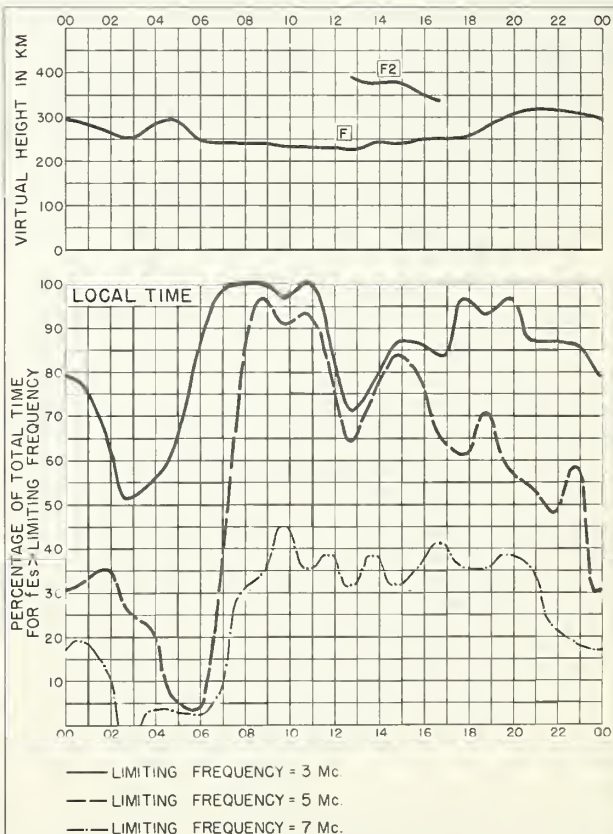


Fig. 88. YAMAGAWA, JAPAN

MAY 1958

NBS 490



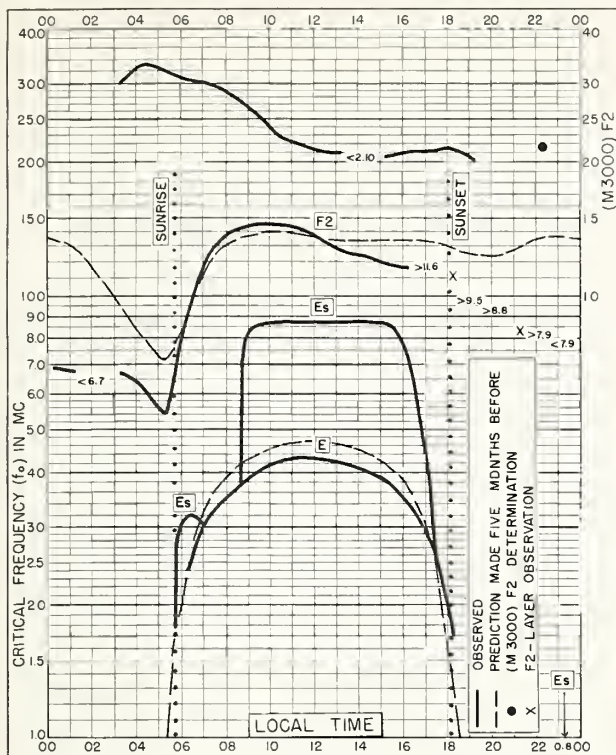


Fig. 89. IBADAN, NIGERIA  
7.4°N, 3.9°E

MAY 1958

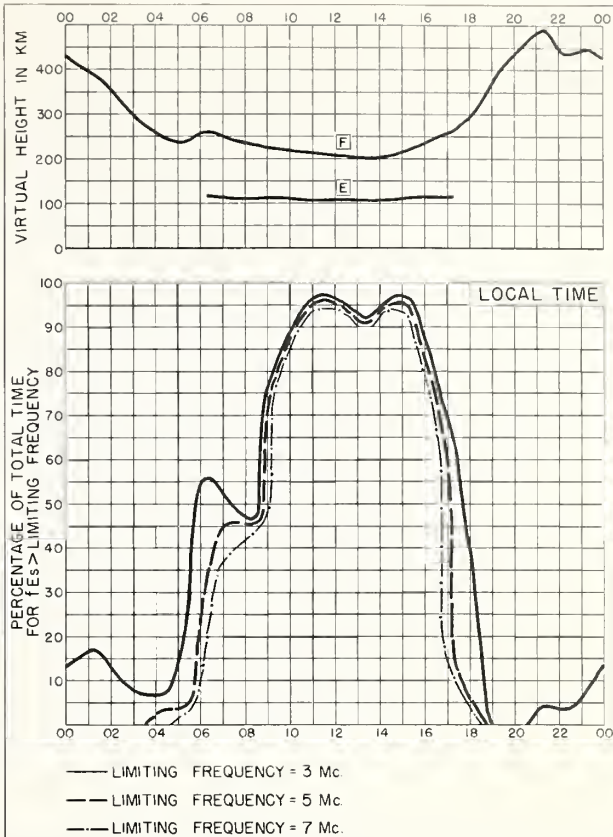


Fig. 90. IBADAN, NIGERIA

MAY 1958

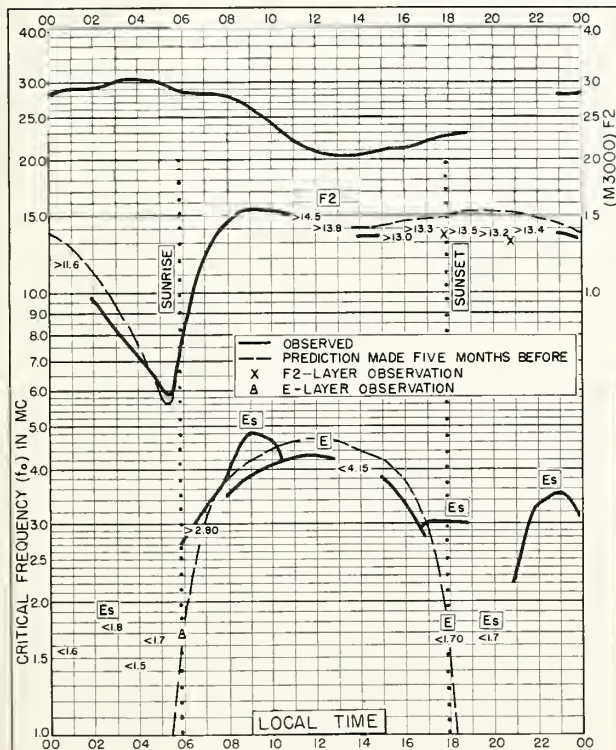


Fig. 91. SINGAPORE, BRITISH MALAYA  
1.3°N, 103.8°E

MAY 1958

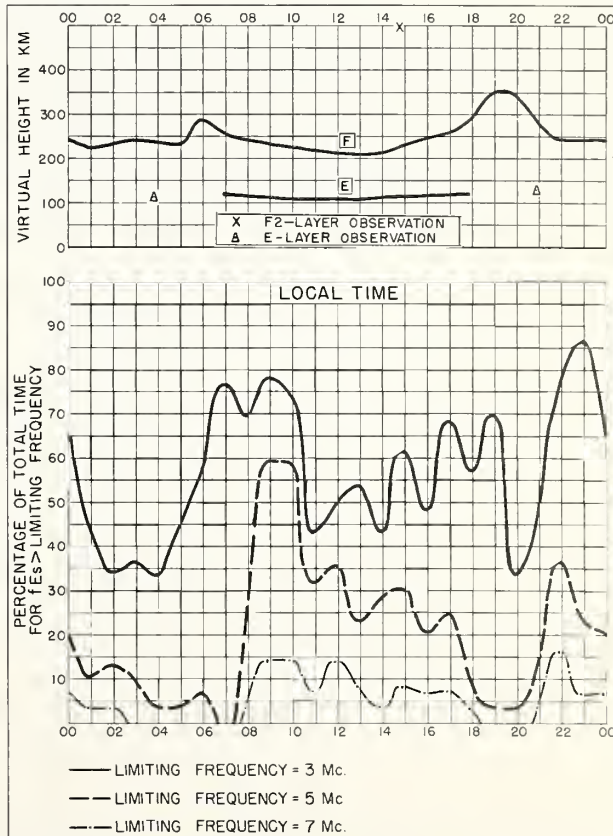


Fig. 92. SINGAPORE, BRITISH MALAYA

MAY 1958



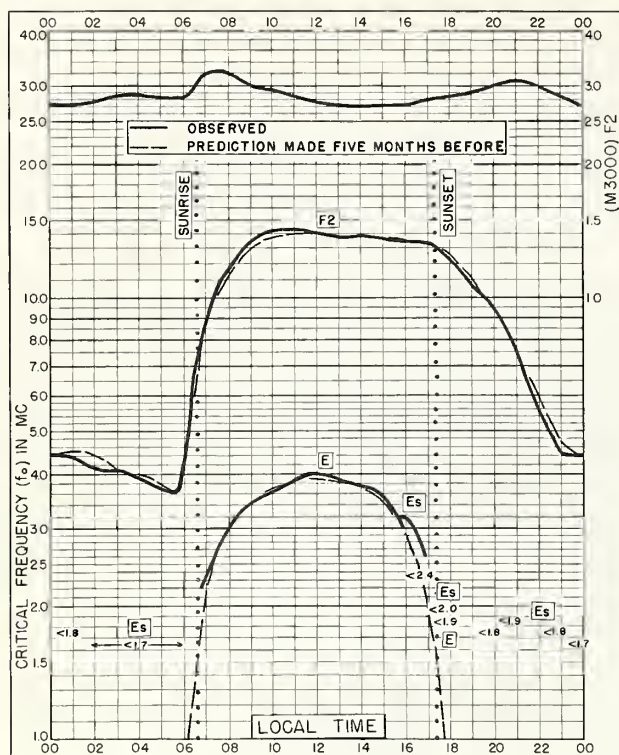


Fig. 93. JOHANNESBURG, UNION OF S. AFRICA  
26.2°S, 28.0°E  
MAY 1958

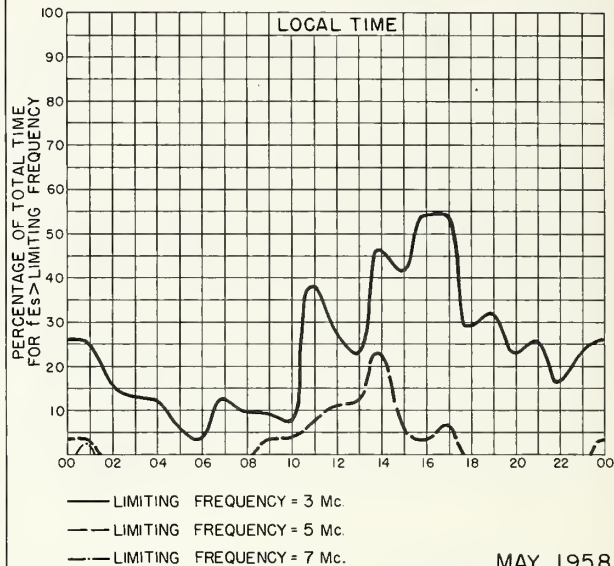
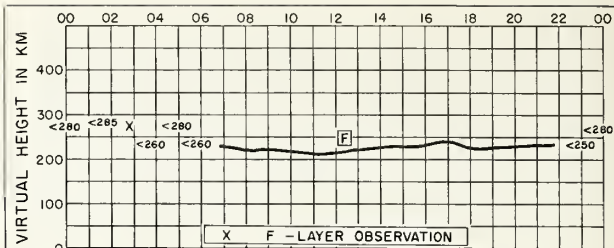


Fig. 94. JOHANNESBURG, UNION OF S. AFRICA  
MAY 1958

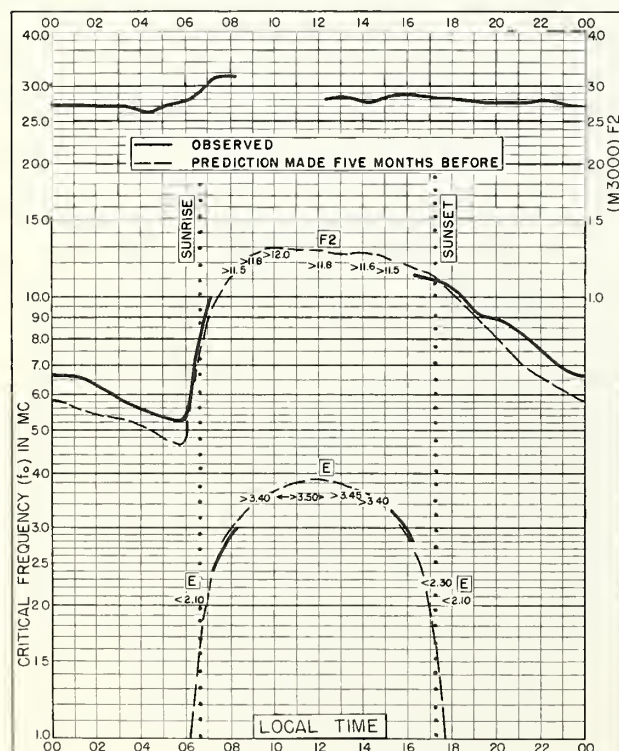


Fig. 95. BRISBANE, AUSTRALIA  
27.5°S, 152.9°E  
MAY 1958

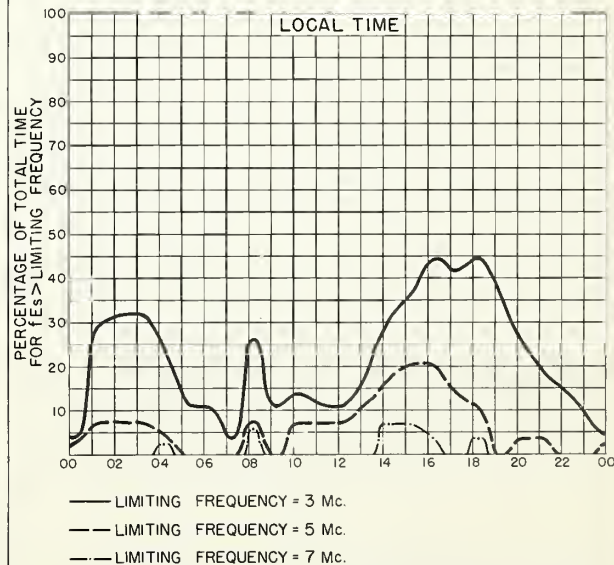
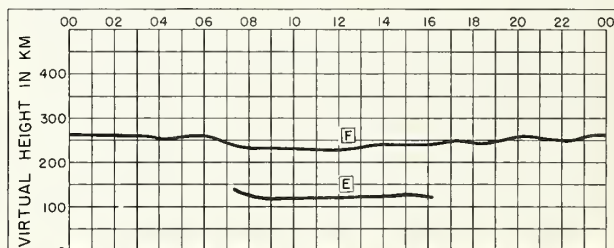


Fig. 96. BRISBANE, AUSTRALIA  
MAY 1958

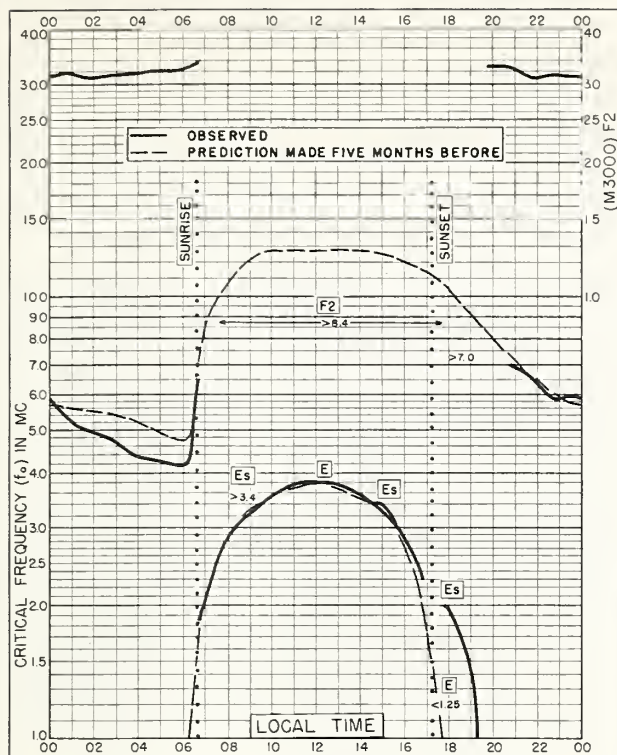


Fig. 97. WATHEROO, W. AUSTRALIA  
30.3°S, 115.9°E MAY 1958

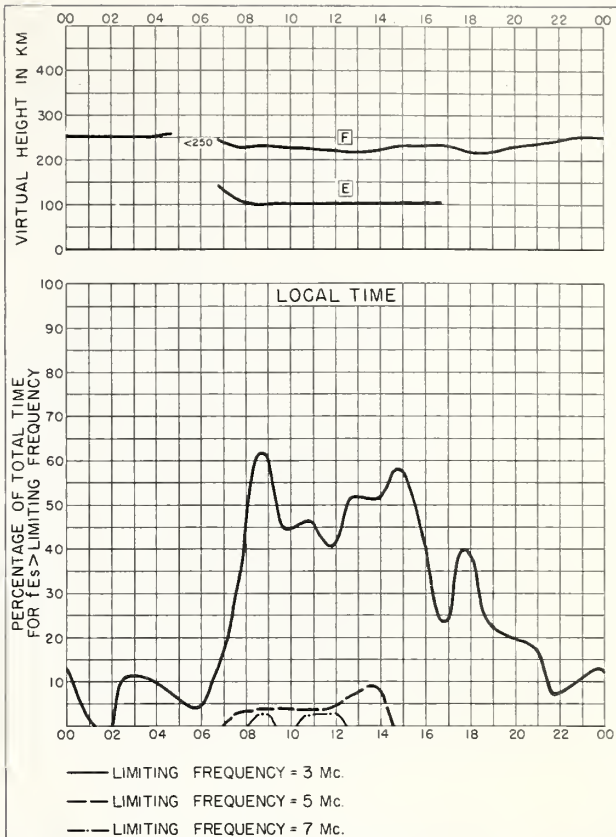


Fig. 98. WATHEROO, W. AUSTRALIA MAY 1958

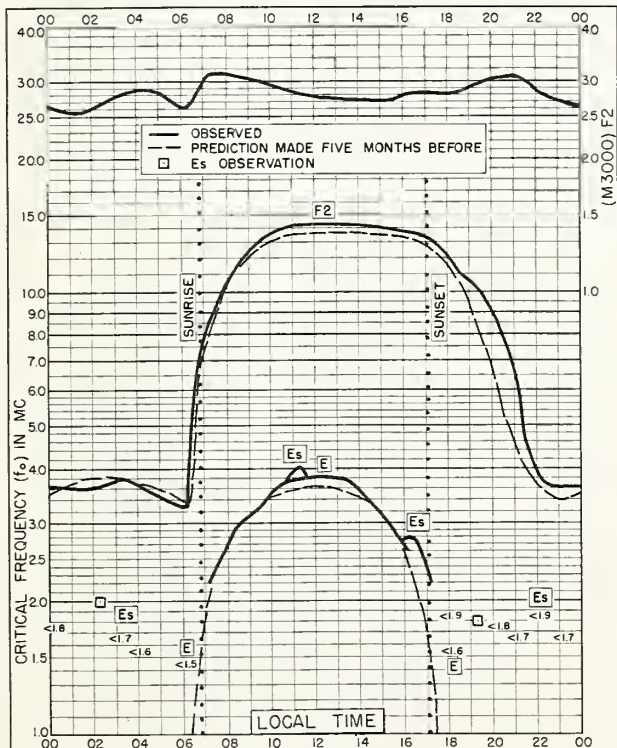


Fig. 99. CAPETOWN, UNION OF S. AFRICA  
34.1°S, 18.3°E MAY 1958

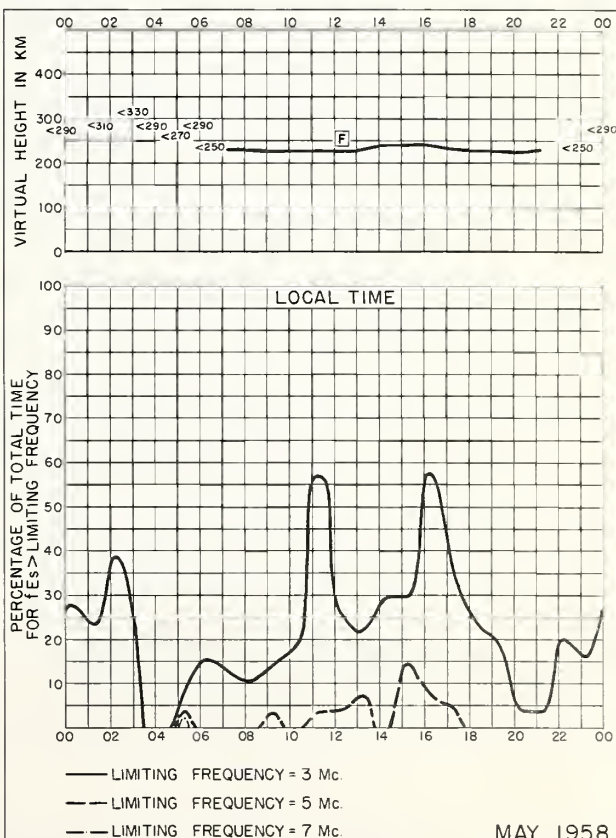


Fig. 100. CAPETOWN, UNION OF S. AFRICA MAY 1958



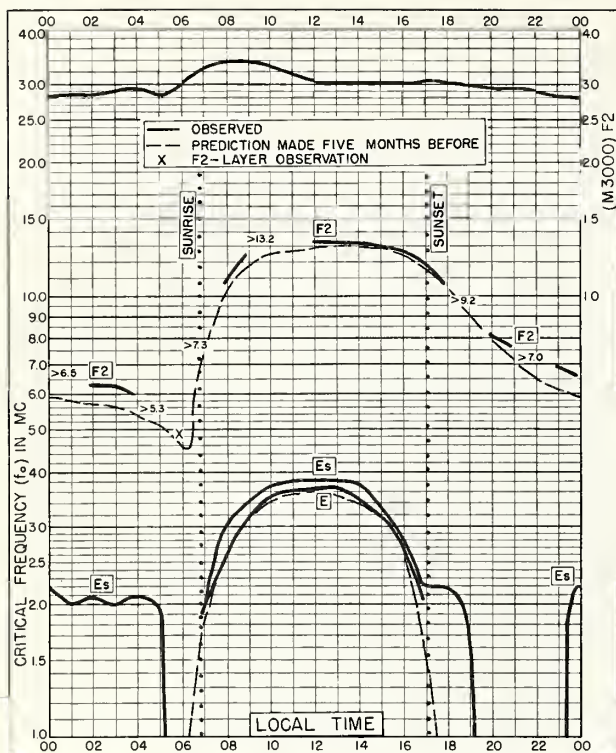


Fig. 101. CANBERRA, AUSTRALIA  
35.3°S, 149.0°E

MAY 1958

NBS 503

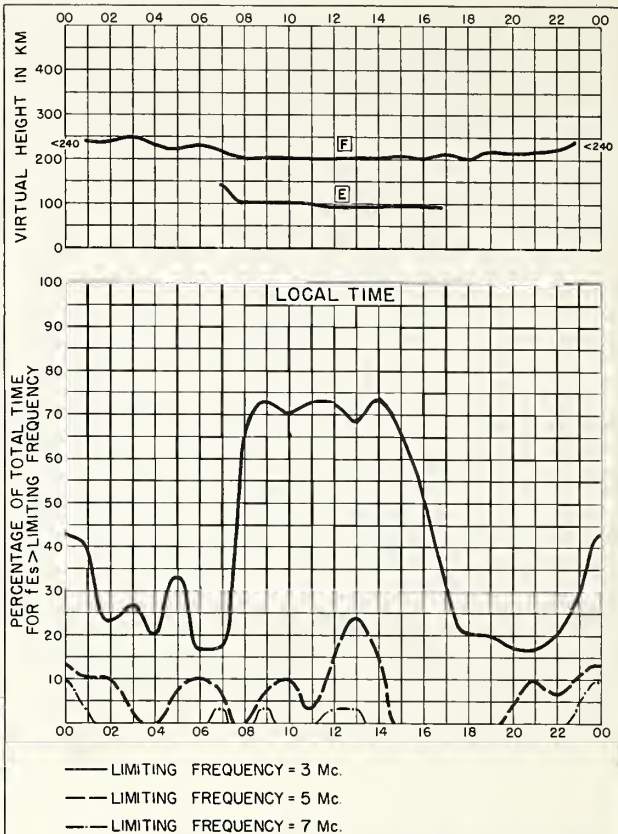


Fig. 102. CANBERRA, AUSTRALIA

MAY 1958

NBS 490

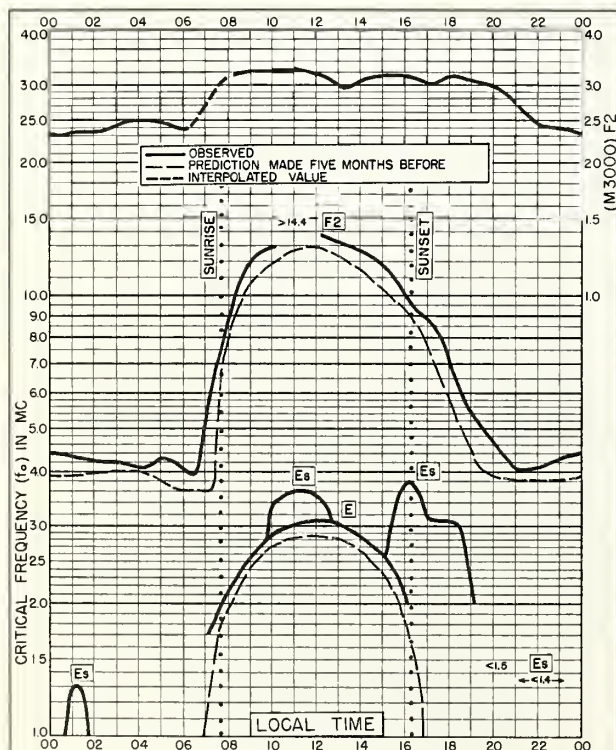


Fig. 103. FALKLAND IS.  
51.7°S, 57.8°W

MAY 1958

NBS 503

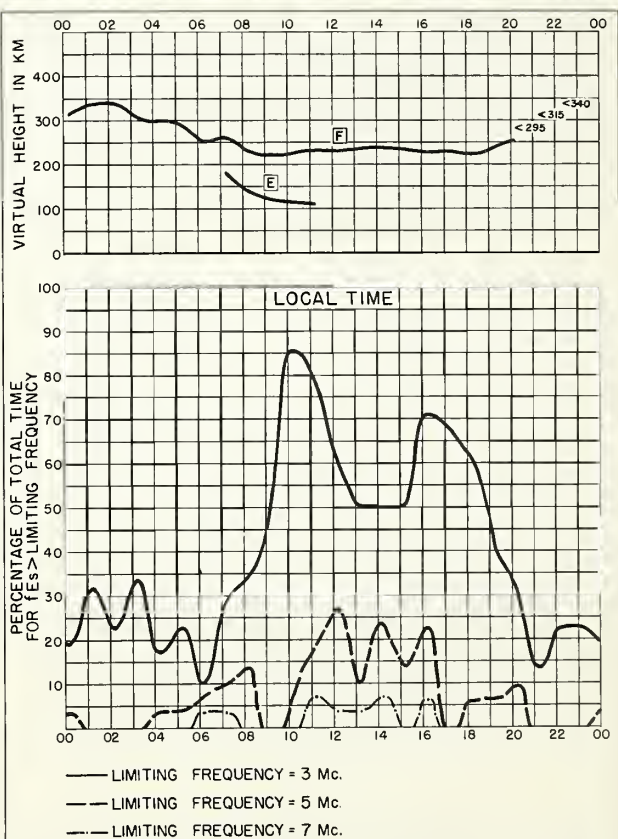


Fig. 104. FALKLAND IS.

MAY 1958

NBS 490

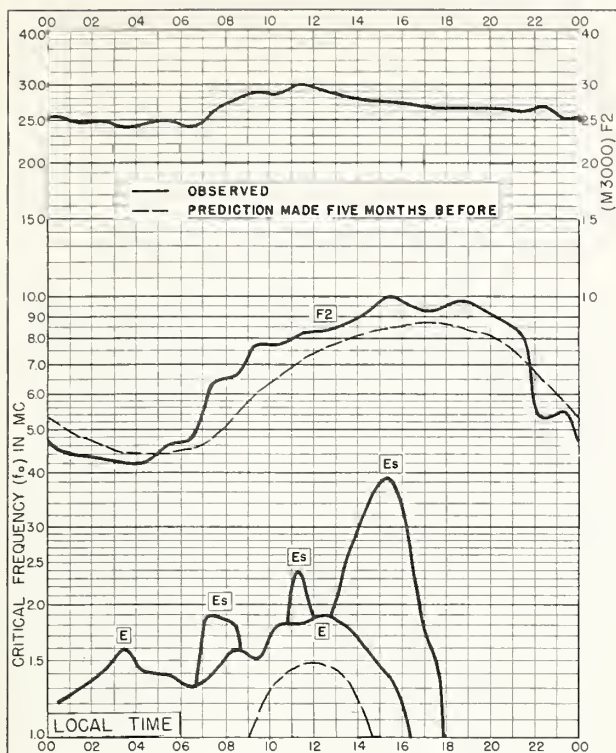


Fig. 105. CAPE HALLETT  
72.3°S, 170.3°E

MAY 1958

NRE 503

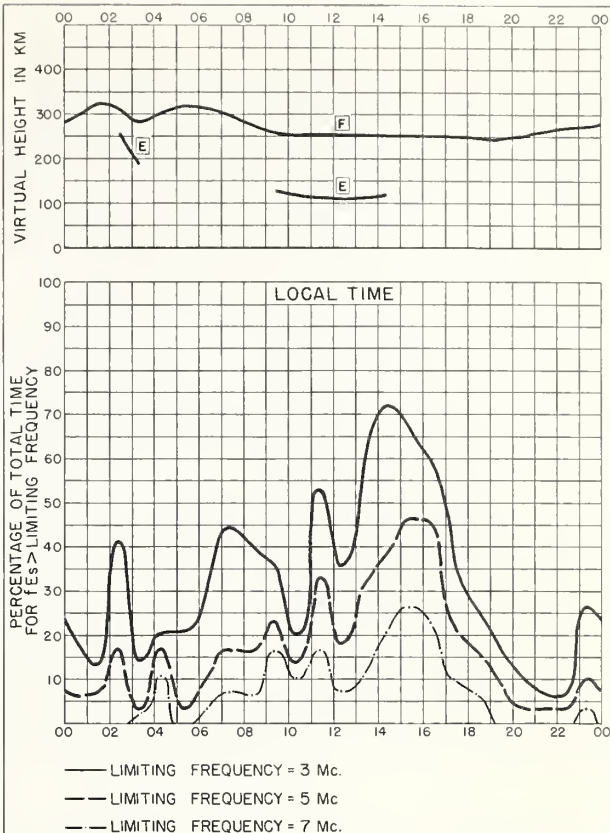


Fig. 106. CAPE HALLETT

MAY 1958

NBS 490

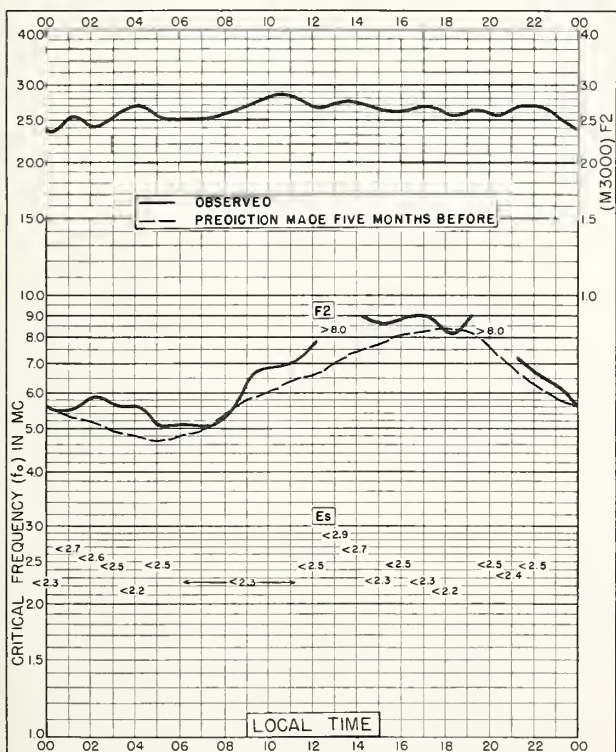


Fig. 107. SCOTT BASE  
77.8°S, 166.8°E

MAY 1958

NBS 503

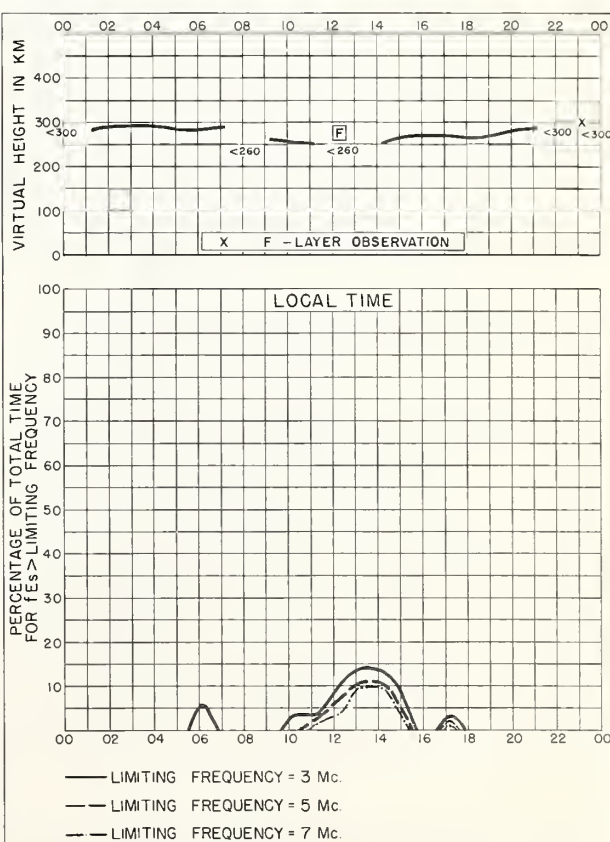


Fig. 108. SCOTT BASE

MAY 1958

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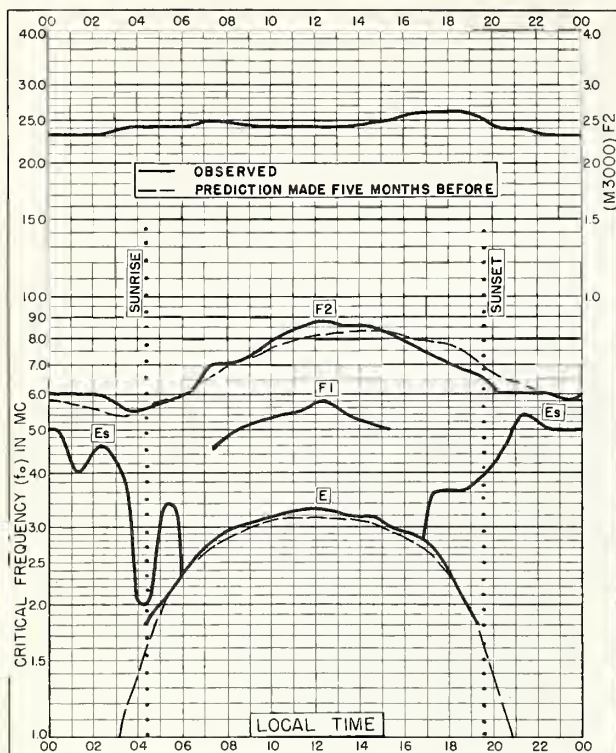


Fig. 109. KIRUNA, SWEDEN  
67.8°N, 20.3°E

APRIL 1958

NBS 503

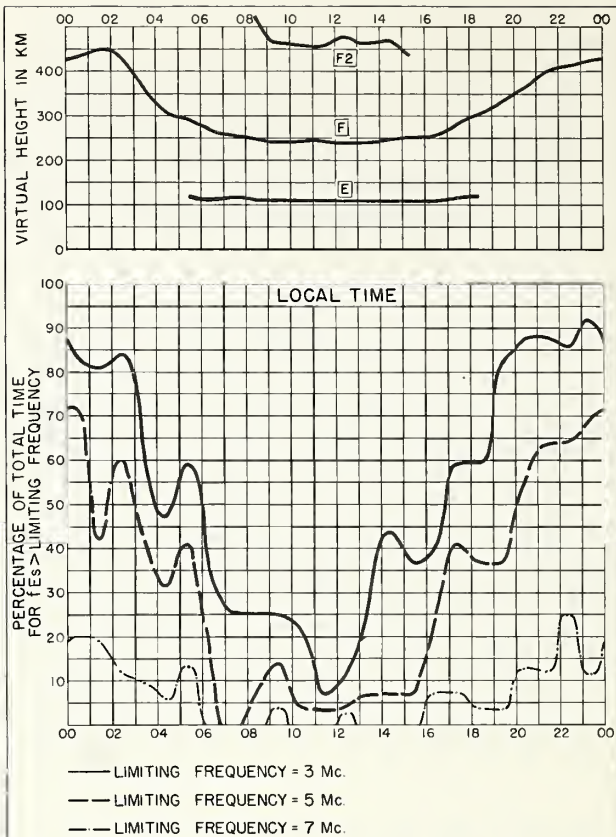


Fig. 110. KIRUNA, SWEDEN

APRIL 1958

NBS 490

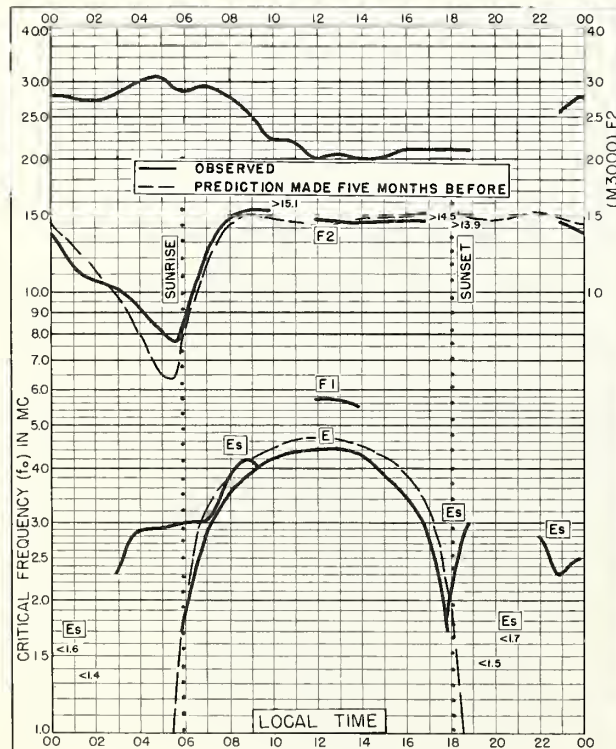


Fig. 111. SINGAPORE, BRITISH MALAYA  
1.3°N, 103.8°E

APRIL 1958

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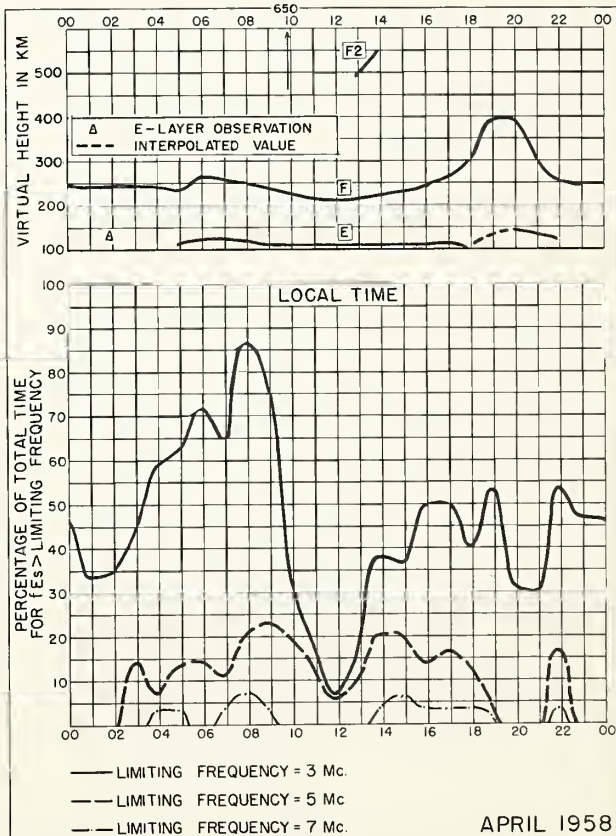


Fig. 112. SINGAPORE, BRITISH MALAYA

APRIL 1958

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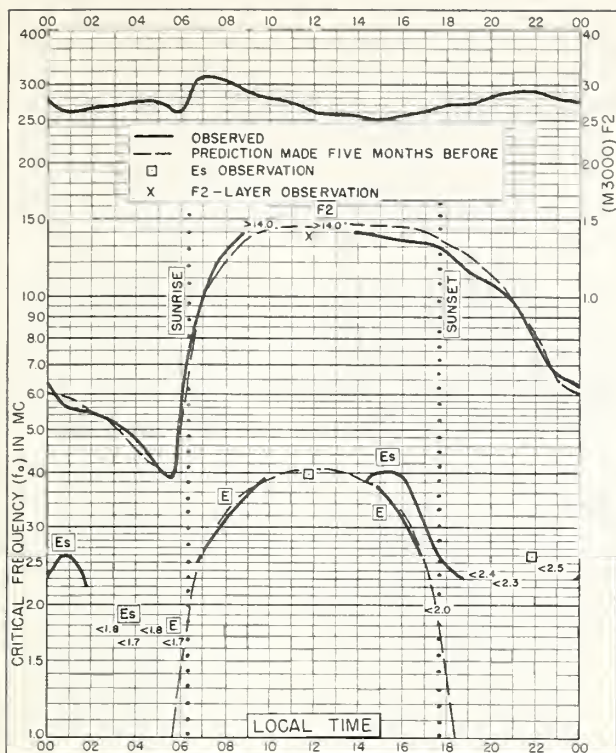


Fig. 113. JOHANNESBURG, UNION OF S. AFRICA  
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APRIL 1958

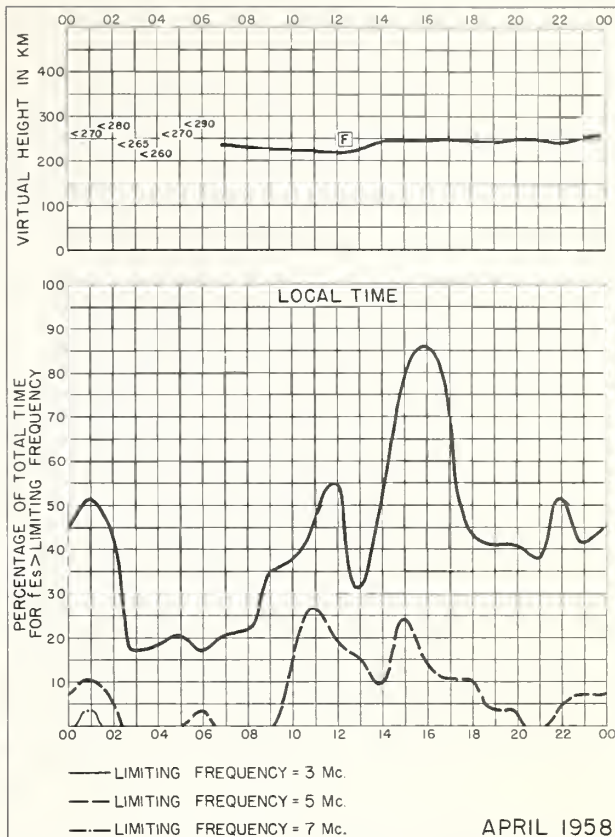


Fig. 114. JOHANNESBURG, UNION OF S. AFRICA

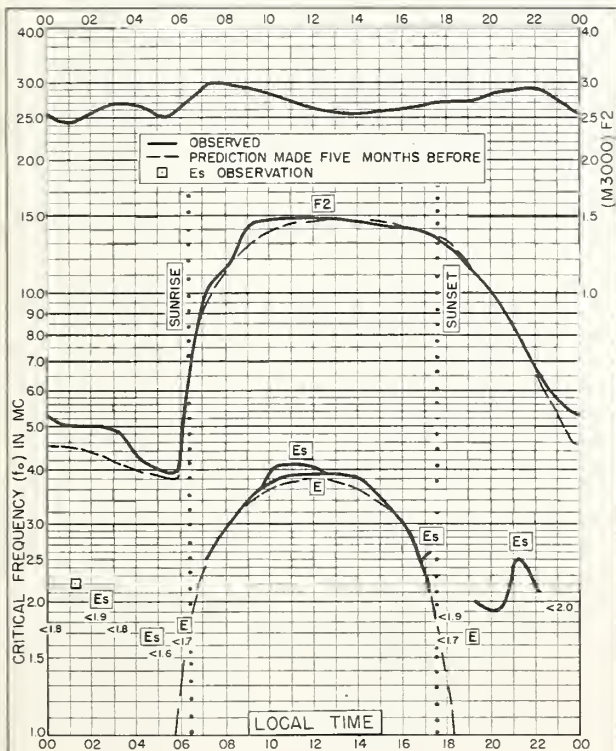


Fig. 115. CAPETOWN, UNION OF S. AFRICA  
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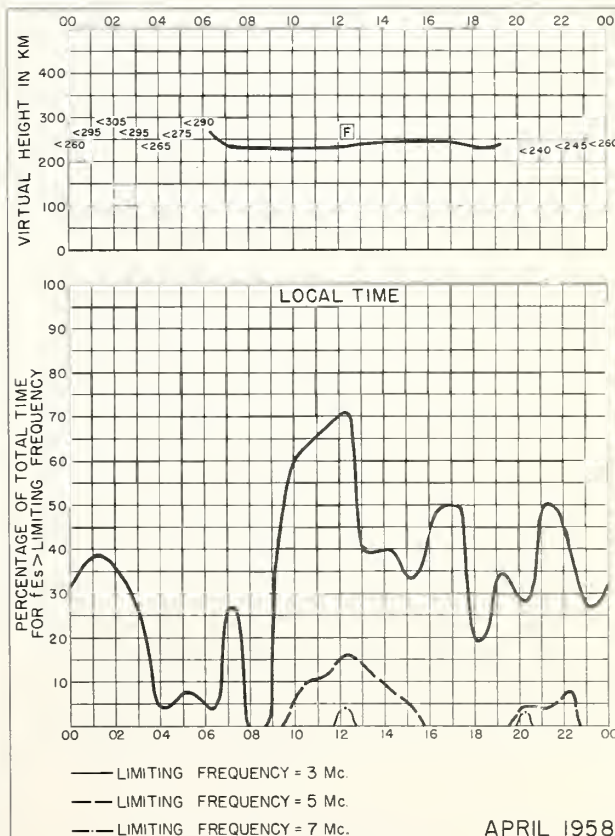
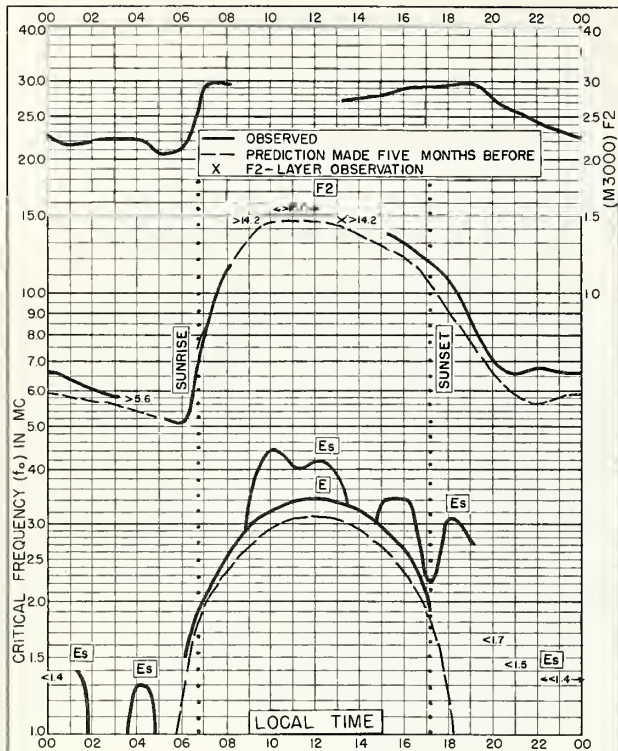


Fig. 116. CAPETOWN, UNION OF S. AFRICA







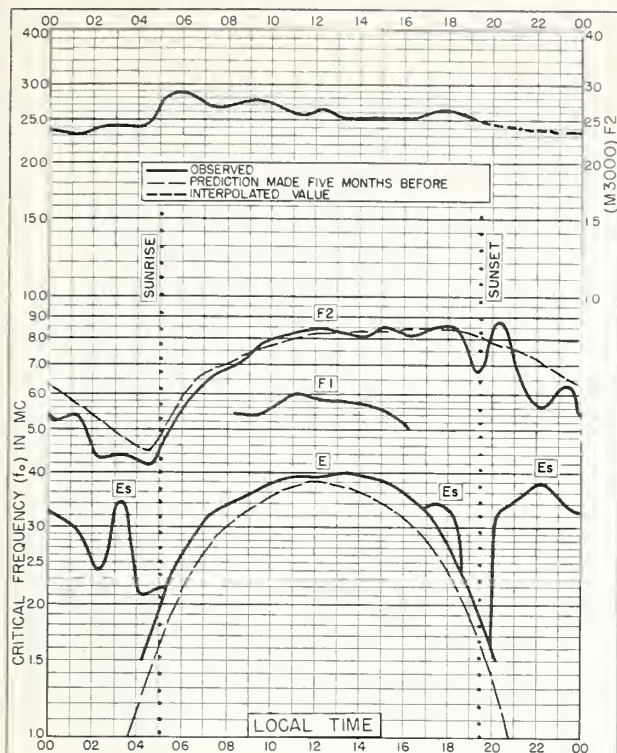


Fig. 121. CAMPBELL I.  
52.5°S, 169.2°E FEBRUARY 1958

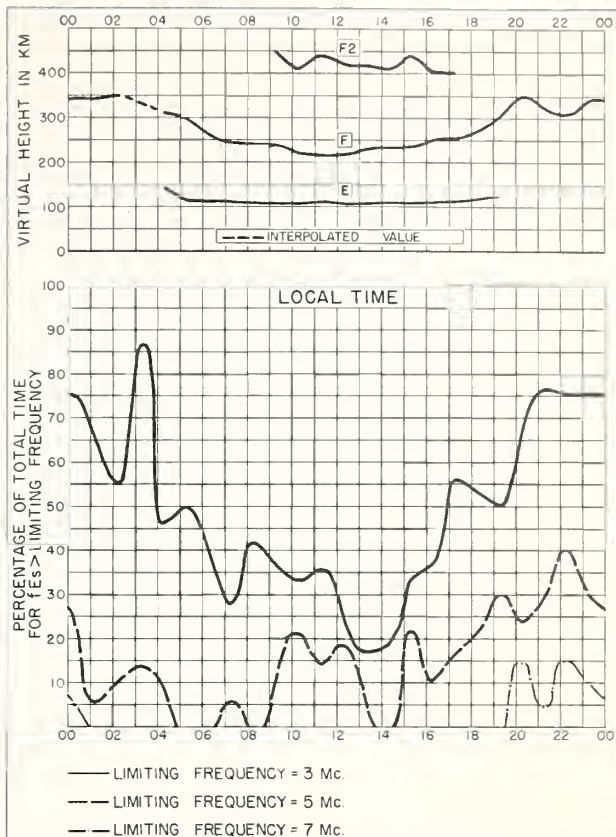


Fig. 122. CAMPBELL I. FEBRUARY 1958

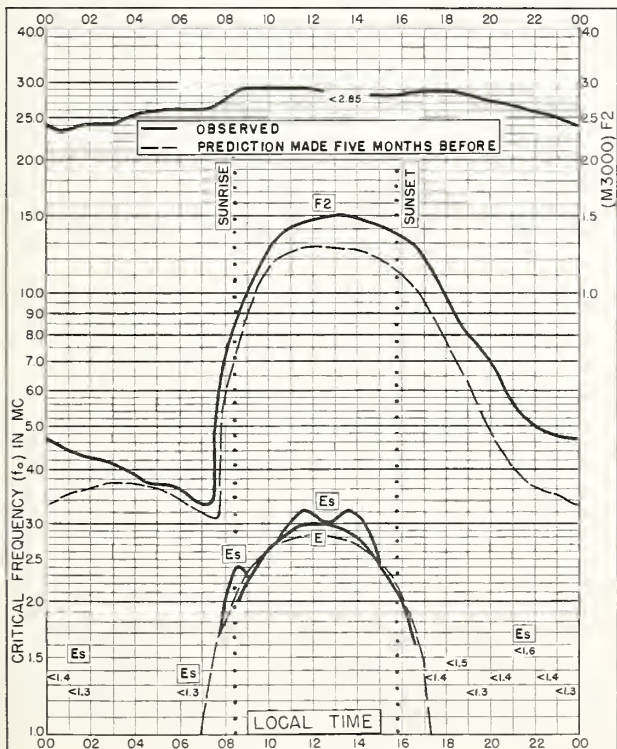


Fig. 123. MOSCOW, U.S.S.R.  
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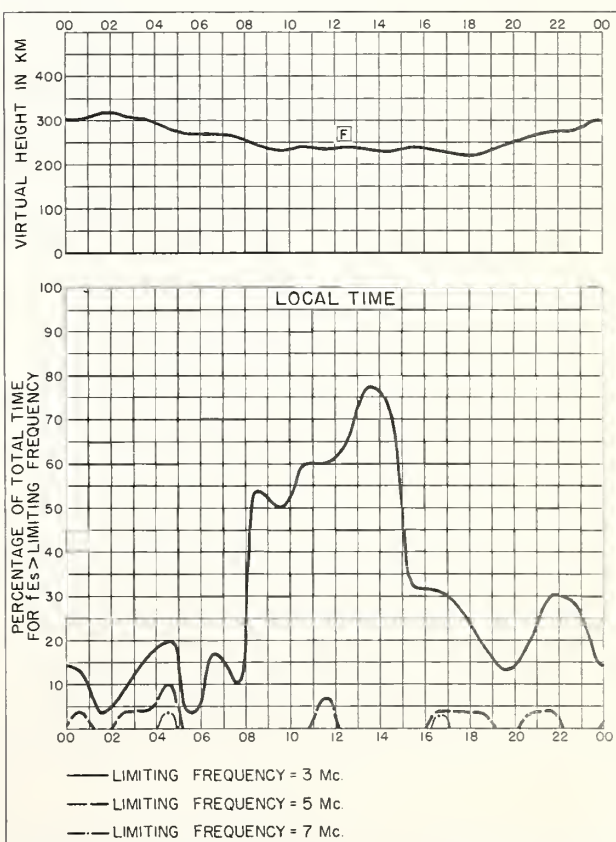


Fig. 124. MOSCOW, U.S.S.R. JANUARY 1958

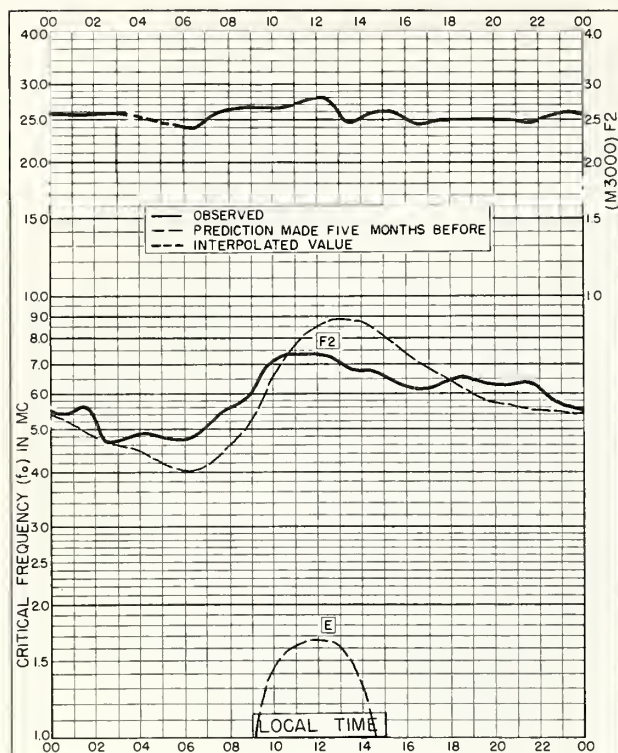


Fig. 125. GODHAVN, GREENLAND

69.3°N, 53.5°W

DECEMBER 1957

NBS 503

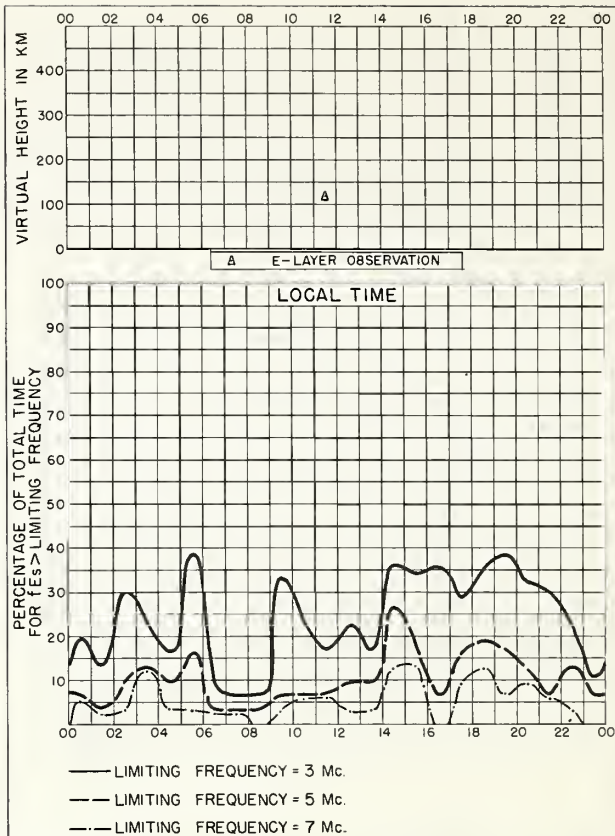


Fig. 126. GODHAVN, GREENLAND

DECEMBER 1957

Commerce-Boulder-Boulder, Colo.

NBS 490

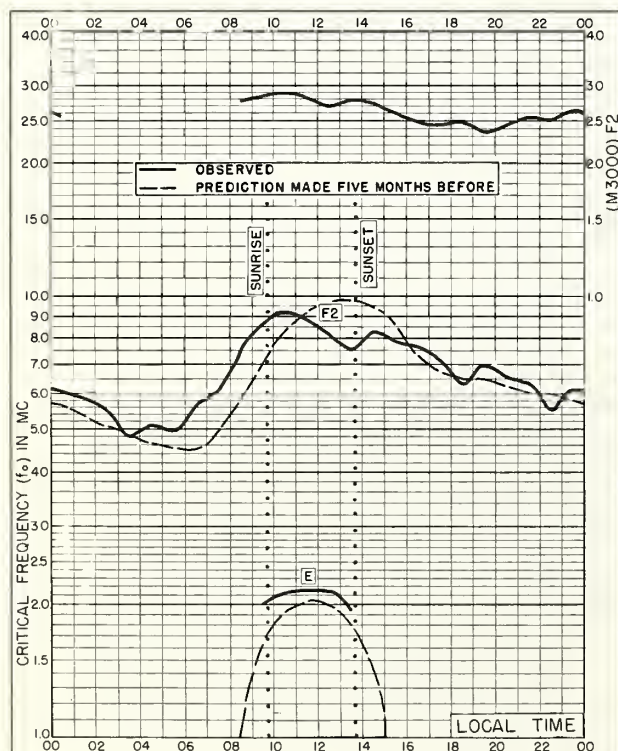


Fig. 127. GODHAVN, GREENLAND

69.3°N, 53.5°W

NOVEMBER 1957

NBS 503

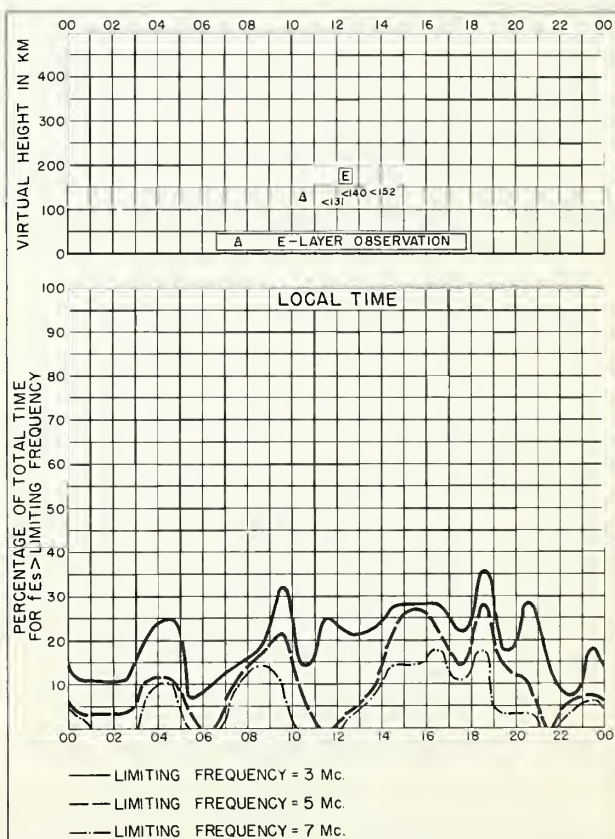


Fig. 128. GODHAVN, GREENLAND

NOVEMBER 1957

Commerce-Boulder-Boulder, Colo.

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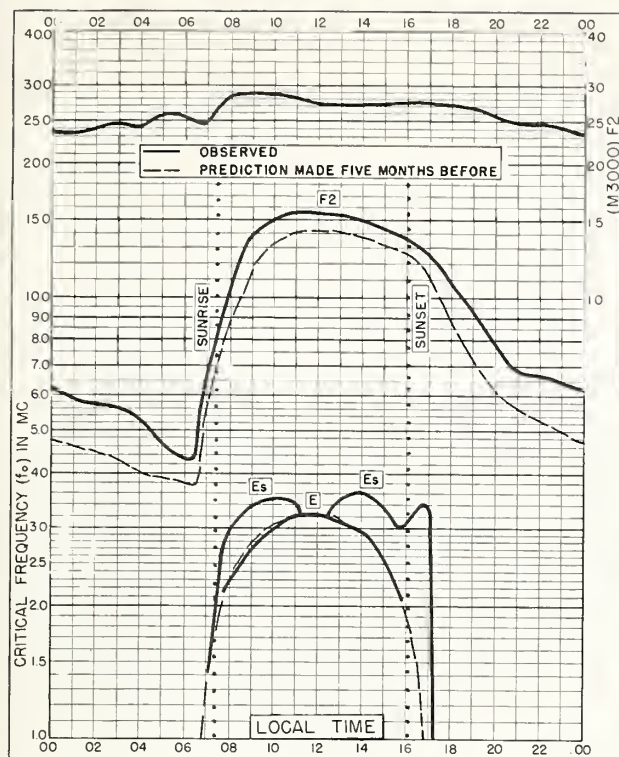


Fig. 129. LINDAU/HARZ, GERMANY  
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NOVEMBER 1957

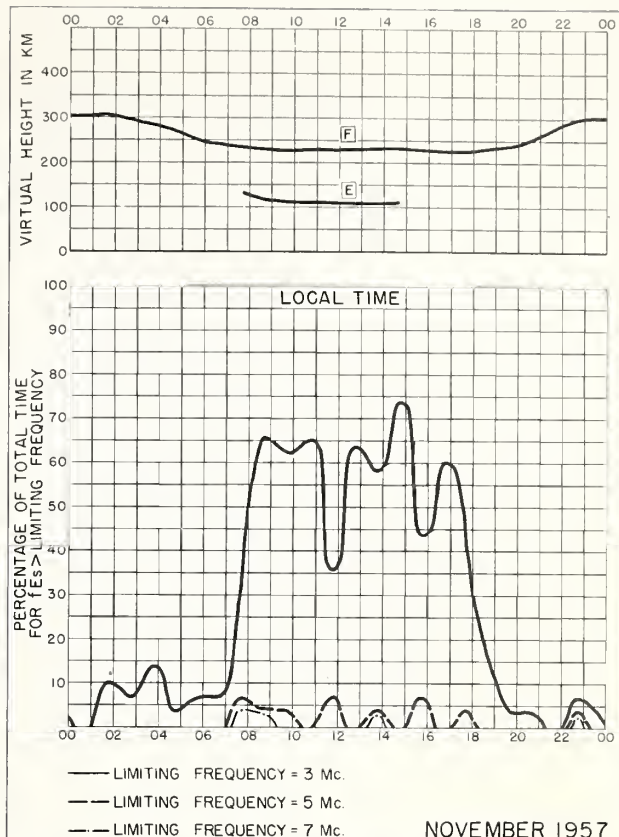


Fig. 130. LINDAU/HARZ, GERMANY

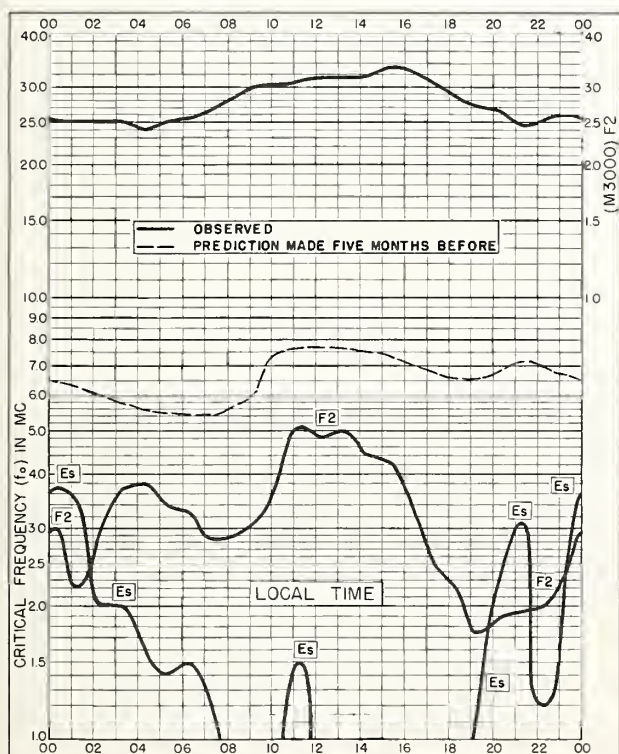


Fig. 131. ELLSWORTH  
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JULY 1957

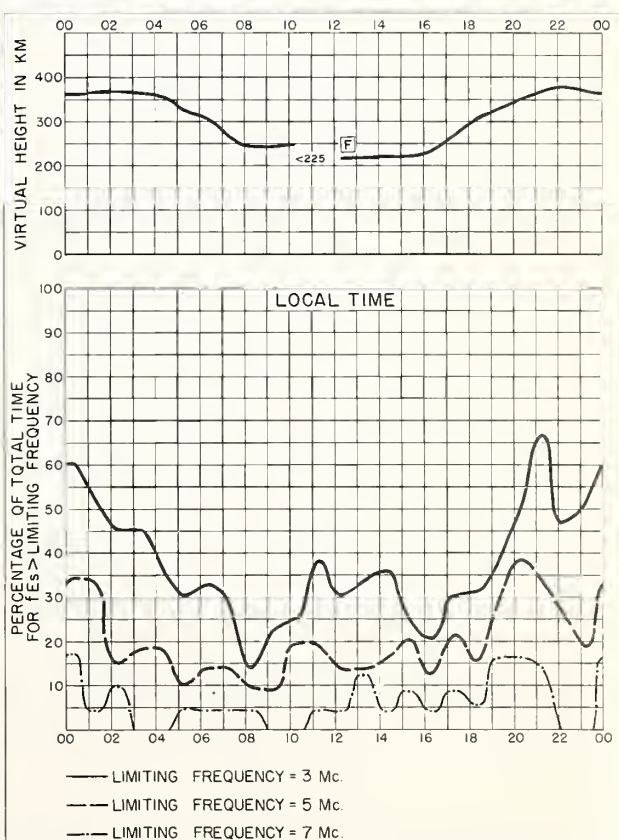


Fig. 132. ELLSWORTH  
JULY 1957



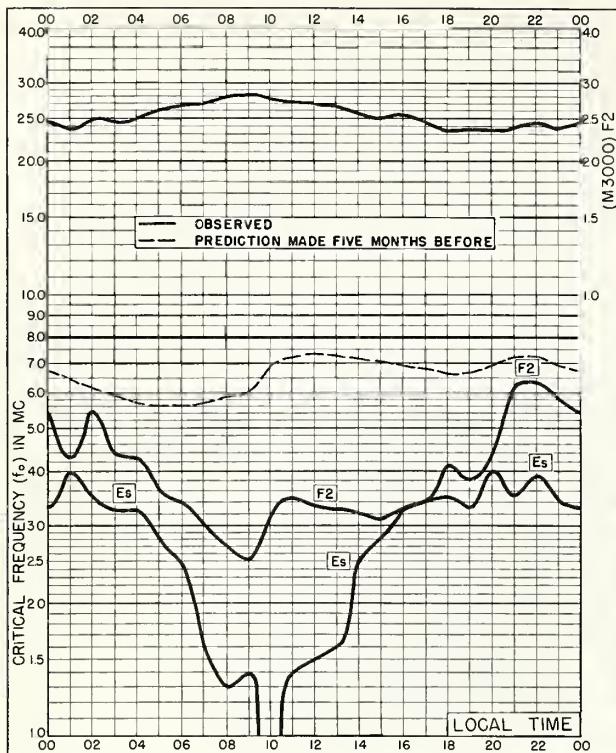


Fig. 133. BYRD STATION  
80.0°S, 120.0°W

JULY 1957

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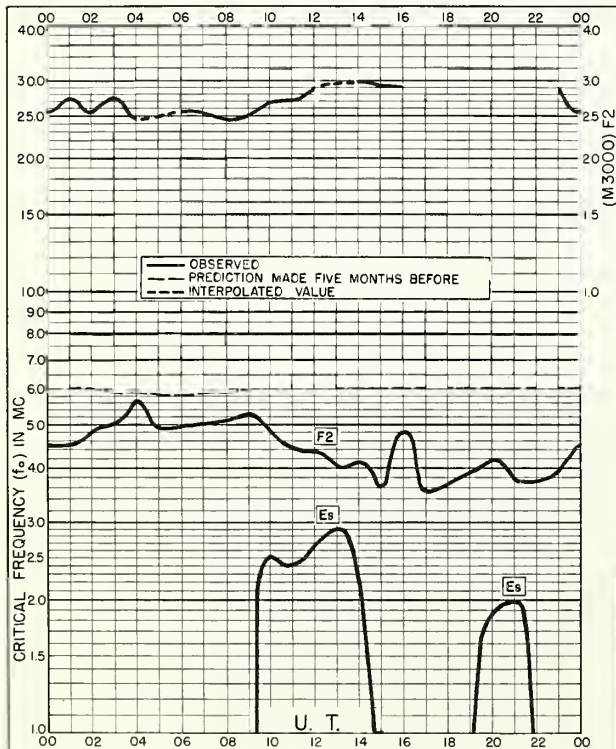


Fig. 135. POLE STATION  
90.0°S

JULY 1957

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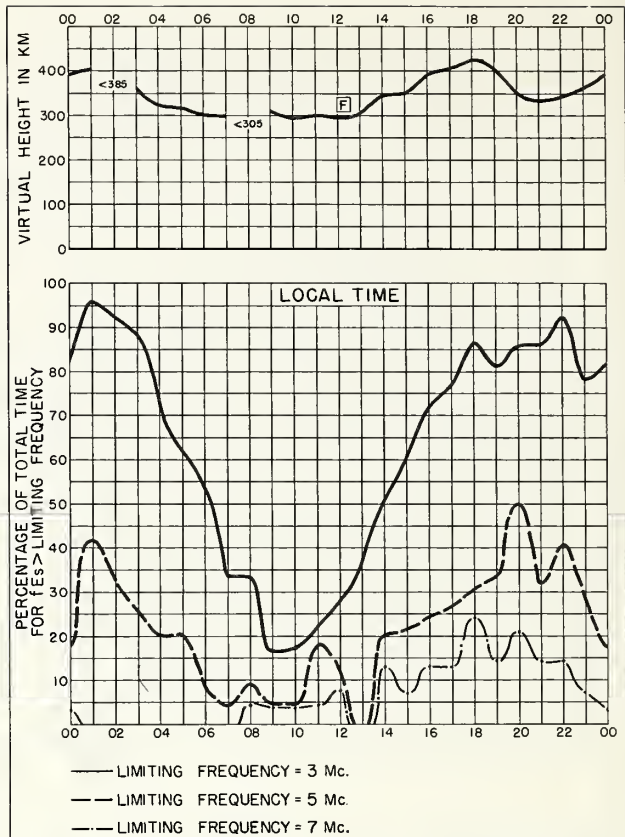


Fig. 134. BYRD STATION

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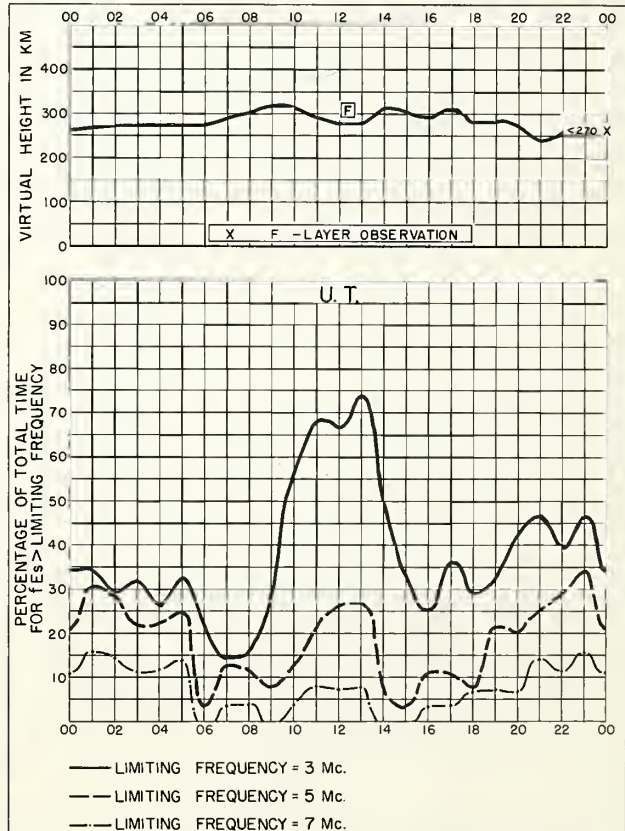


Fig. 136. POLE STATION

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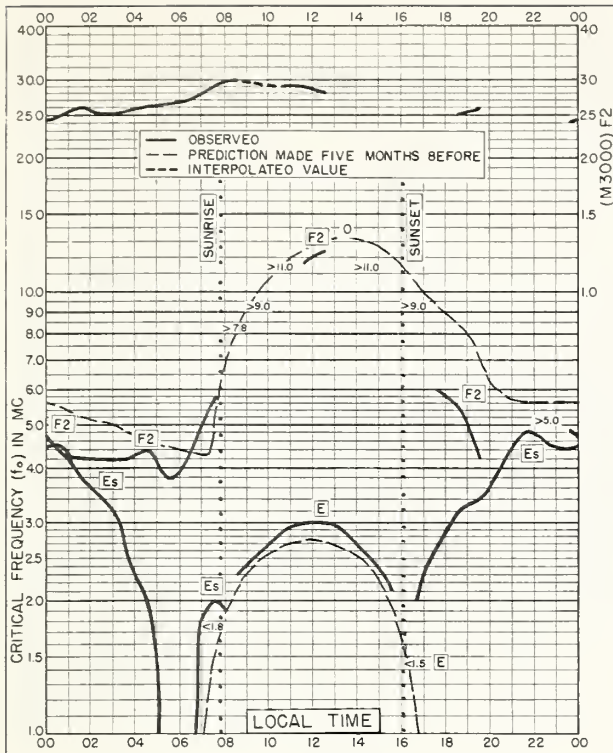


Fig. 137. MACQUARIE I.  
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MAY 1957

NBS 503

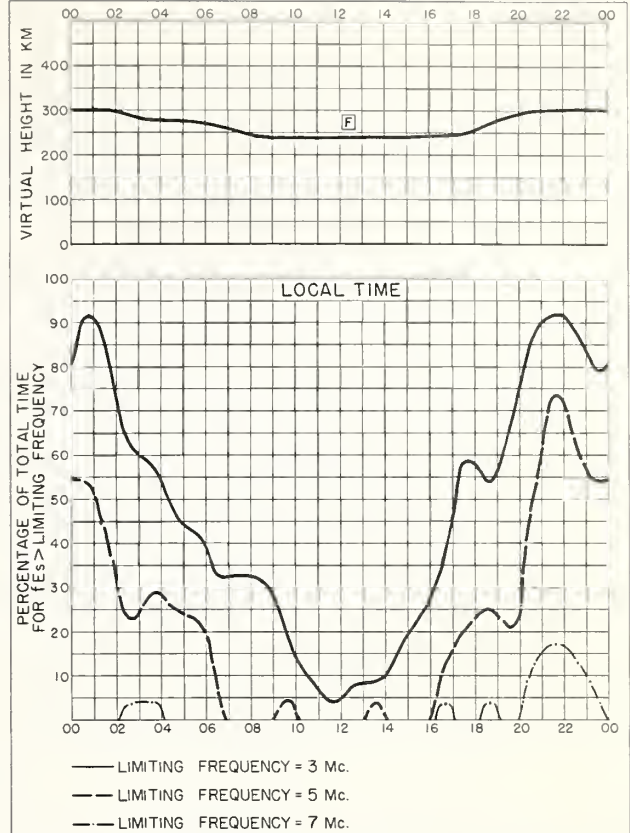


Fig. 138. MACQUARIE I.

MAY 1957

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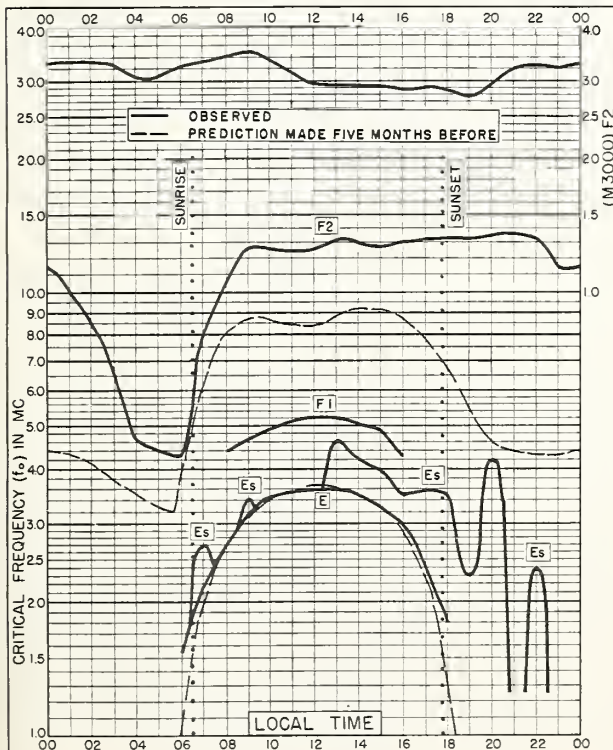


Fig. 139. DAKAR, FRENCH W. AFRICA  
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JANUARY 1956

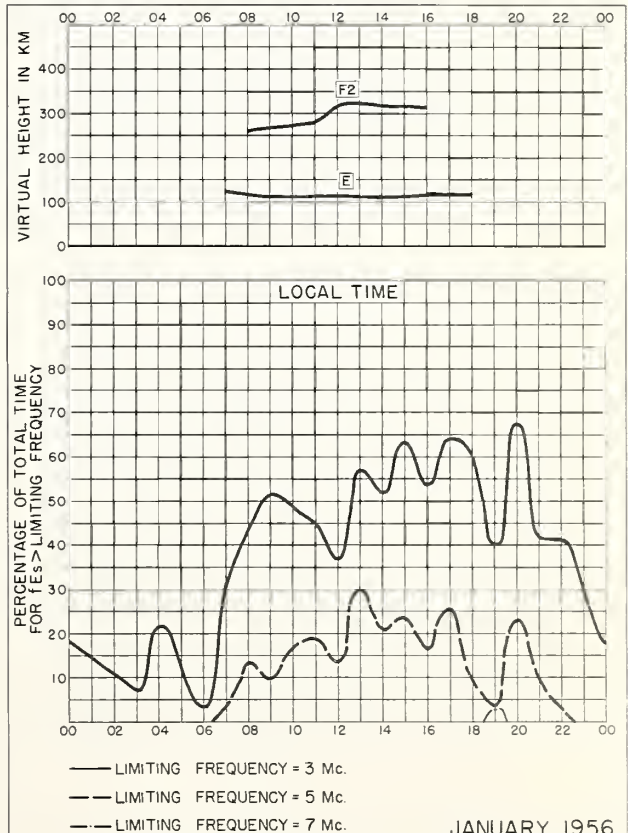


Fig. 140. DAKAR, FRENCH W. AFRICA

JANUARY 1956

Commerce-Standard-Industry, Calif.

NBS 490



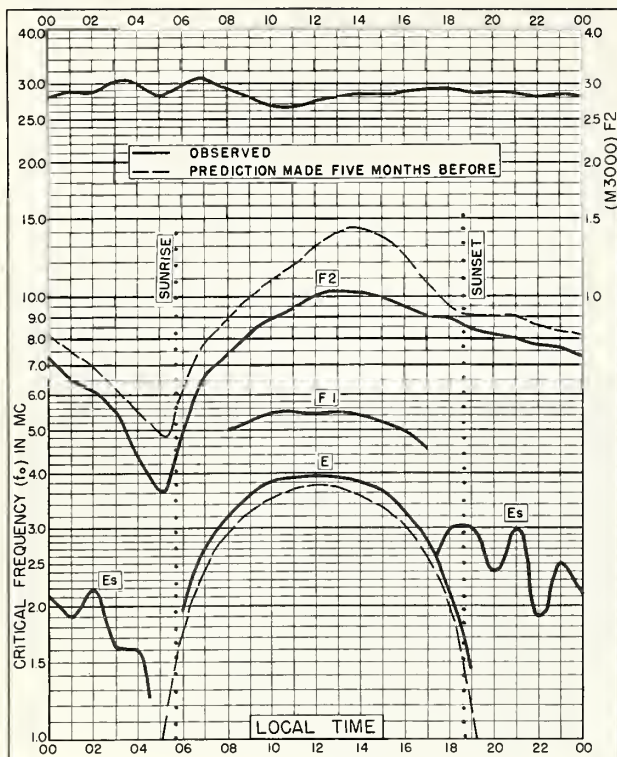


Fig. 141. TANANARIVE, MADAGASCAR  
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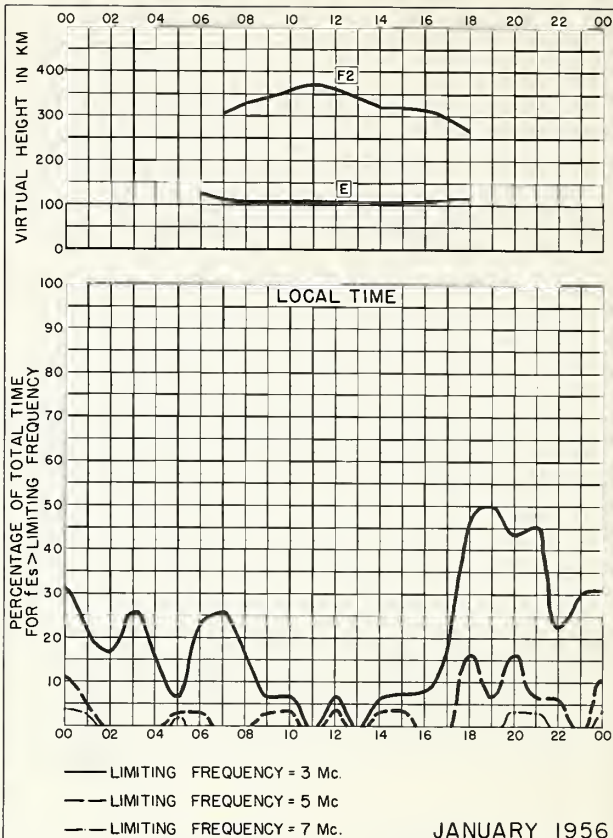


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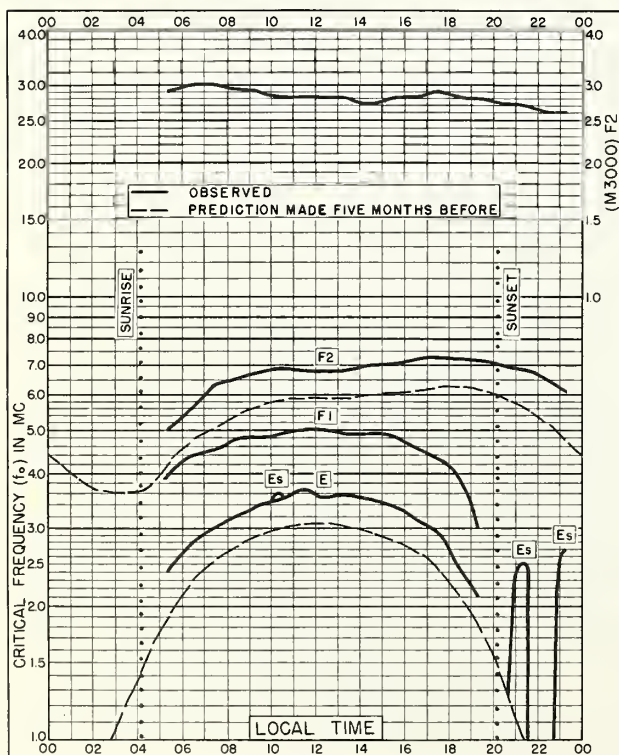


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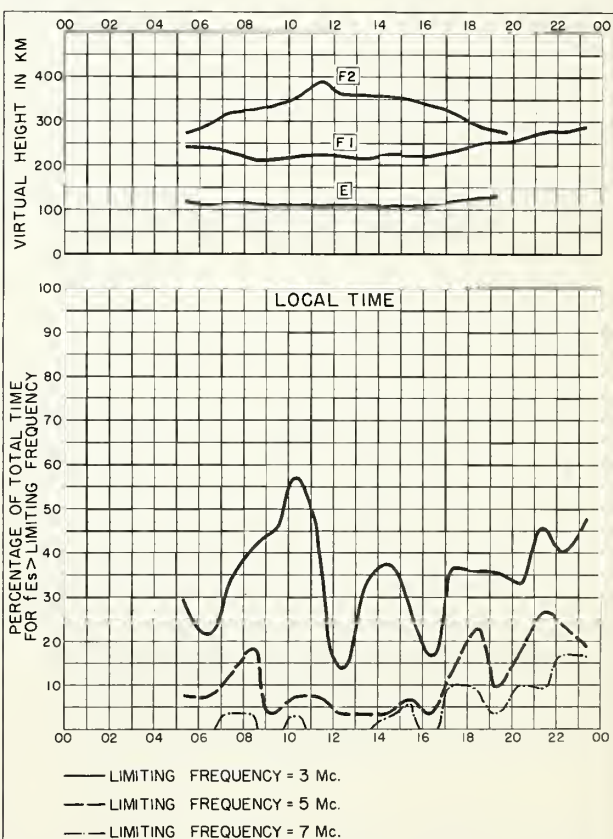


Fig. 144. CAMPBELL I.  
JANUARY 1956

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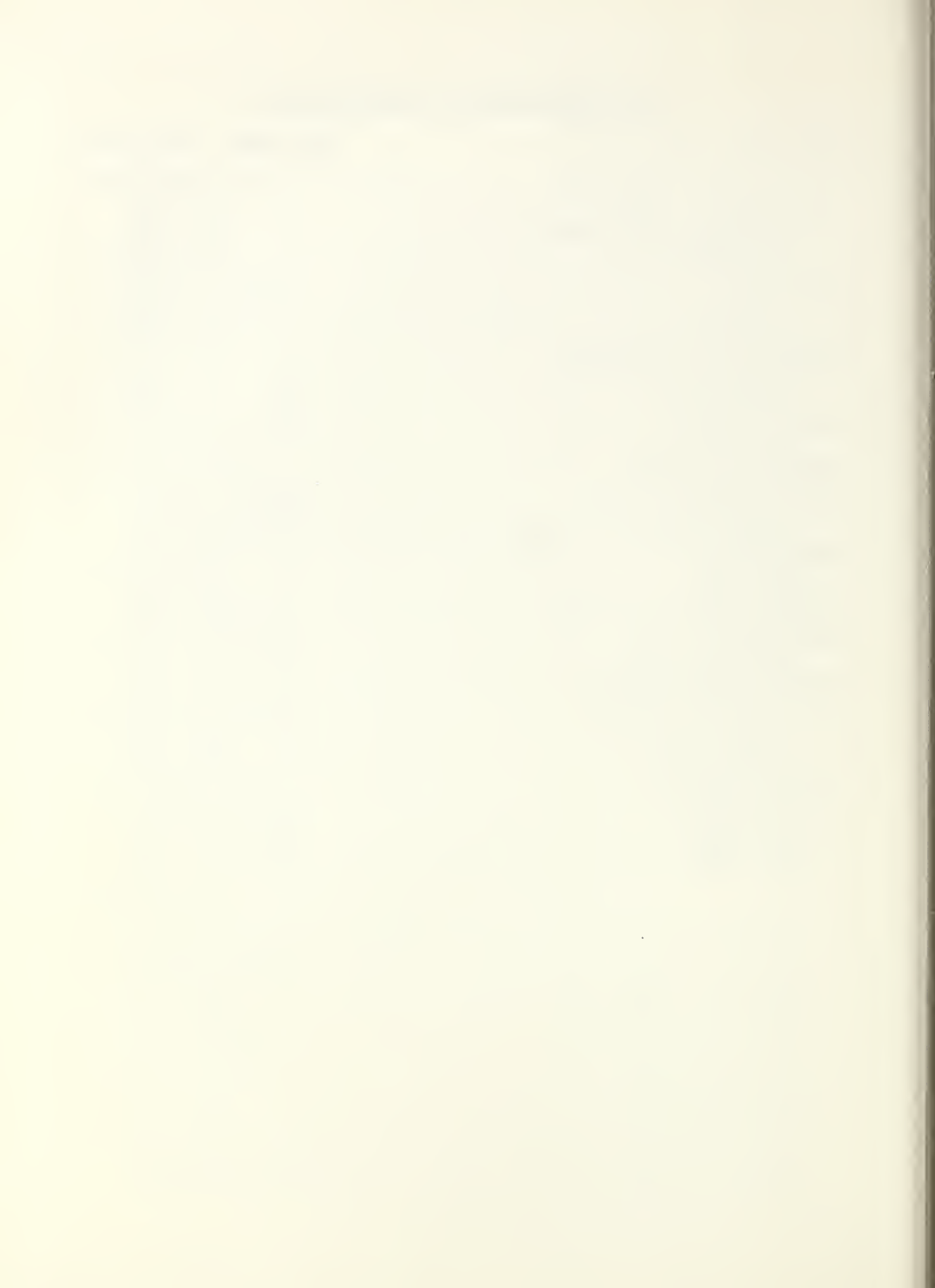
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[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

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Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

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CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

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CRPL—Jc. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

### Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11-499-, monthly supplements to FM 11-499; Dept. of the Air Force, TO 31-3-28 series). On sale by Superintendent of Documents \* Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.  
(Part B). Solar-Geophysical Data.

Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic or other radio propagation data.

### Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

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### Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. \$1.25.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles. 30 cents.

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